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Wm. Bartram

BIOGRAPHICAL SKETCH

OF

WILLIAM BARTRAM.

In a short biographical notice, like the present must necessarily be, little more can be said of a man, than to give the general outlines of character and the leading incidents of his life.

Of Mr. Bartram, the world, in times past, knew much, for his fame extended to both continents; in his sphere, he was one of the most eminent men of America; his knowledge was acquired by incessant mental and bodily labour; the fields of natural science in his early days were unexplored, and he resorted to the study of nature where she unfolds her works to the senses as the only true source of knowledge, and it seems due to his eminence, to offer a small tribute of respect in a biographical way, that his example for temperance, application to the study of science, perseverance, and the strict performance of his social duties, should be given for the benefit and encouragement of others.

The accompanying portrait is a correct likeness of Mr. Bartram, and the only engraved one ever given to the American public.

JOHN BARTRAM, (father to the subject of the present biography,) was a celebrated and self-taught philosopher and botanist, and was born near the village of Darby, in Delaware county, Pennsylvania, in the year 1701. His grandfather, John Bartram, and family, emigrated to Pennsylvania from Derbyshire, in England, with some of the adherents of William Penn, in 1682. In very early life he manifested much desire for knowledge, but the means of education at that period in the colonies were not sufficient to satisfy his thirst for knowledge, and being at so great a distance from Europe, he had to content himself with only a moderate education, and rely on the resources of his own mind, and apply himself to books and the society of literary and eminent men; the result was, that he acquired a knowledge of other languages, and it is said, that "so earnest was he in the pursuit of learning, that he seldom sat at his meals without his book; often his victuals in one hand and his book in the other," and by such indefatigable application he soon fitted himself for the highest scale of society; he was bred a husbandman, and while cultivating the grounds as means to support his family, he prosecuted his avocations as a philosopher. The vegetable kingdom, however, attracted most his attention, and he applied himself with renewed vigour to the study of botany.

He was the first American who conceived and executed the design of a botanic garden; this he located in a delightful situation on the banks of the Schuylkill river, about four miles from Philadelphia, on a spot which embraced a variety of soils and situations to the extent of six or seven acres, and enriched it with a great variety of indigenous and exotic plants; many of the former having been collected by himself during his travels in various parts from Canada to Florida. His progress in philosophy, botany, and other branches of natural history, attracted the notice and esteem of the principal literary and eminent characters of America, and the correspondence and friendship of many of those of Europe; in consequence of which he was frequently employed in collecting what was new and curious to furnish and ornament many of the European gardens with the productions of the new world, and he was at last appointed American Botanist to George the Third, in which appointment he continued until his death, in September, 1777, in the 76th year of his age.

He left several children. John, (the fifth son,) succeeded him as proprietor of the Kingsess botanic garden, which, after his death, in 1812, was inherited by his daughter, Mrs. Carr, wife of Col. Robert Carr, in whose possession it still remains.

WILLIAM BARTRAM, known as a traveller and a botanist, was the fourth son of John Bartram, and was born April the 9th, 1739, at the botanic garden, Kingsessing township, near Philadelphia.

His education was a moderate one, and nothing remarkable appeared in his character during the early part of his youth, which was chiefly spent in agricultural pursuits; this,

however, he soon relinquish ed to serve an apprenticeship to a respectable merchant of Philadelphia, and at the age of 22 he went to Wilmington, N. C., with the view of entering into the mercantile business, but being ardently attached to the study of botany, he left that place in about four years, and accompanied his father on a journey into East Florida, to explore the natural production of that country; and it was during this period he discovered the Franklinia, a beautiful tree, so called in honour of Dr. Franklin. After this he settled on the River St. Johns, in the same territory, and commenced the cultivation of indigo, but soon abandoned it in consequence of bad health, and returned in the year 1771 to his father's residence.

The information acquired by his travels and researches now began to bring him to the notice of the eminent and learned men of both America and England, and at the solicitations and expense of Dr. Fothergill, of London, he made excursions to the Floridas and the western parts of Carolina and Georgia, in search of rare and useful productions of nature, but chiefly of the vegetable kingdom, to which gentleman he sent his collection of plants, dried specimens, and drawings.

From a diary kept by him during these travels he was enabled to furnish the world with a large volume of the most interesting and useful information, chiefly relating to the comparatively unexplored parts of those inhospitable regions, through which, at that early period, the traveller seldom bent his way merely for the love of science and the studies of nature.

This work was published in three countries about the year 1791 to 1793, viz: in Germany, Ireland, (Dublin,) and the United States, in an octavo form of upwards of 500 pages.

Mr. Bartram set sail on his intended journey from Philadelphia in April, 1773, in the brig Charleston Packet, for Charleston, where he arrived after a very tedious and stormy passage of eleven days from the Capes; here he remained a few days, and gained the friendship of many of the most wealthy and respectable families, when he departed for Savannah on his intended expedition.

At this period Georgia and the Floridas were inhabited, and, indeed, overrun with different tribes of Indians; many of whom were exceedingly hostile to the whites—from this circumstance, as well as the nature of the country, the miserable roads, and other difficulties in travelling, it became extremely unpleasant, and, at times, hazardous for Mr. Bartram to prosecute his journey; but his experience had prepared him for hardships, and, being of a humane and amiable disposition, he went forward in the confidence that others felt toward him, as he felt toward all mankind—while these benevolent feelings were frequently manifested in his countenance and demeanour, and on several occasions worked safety for him when extreme danger was at hand.(1)

In all his travels, Mr. Bartram singularly adhered to the

(1) I arrived at St. Ille's in the evening, where I lodged; and next morning, having crossed over in a ferry-boat, set forward for St. Mary's. The situation of the territory, its soil and productions, between these two last rivers, are nearly similar to those which I had passed over, exept that the savannahs are more frequent and extensive.

It may be proper to observe, that I had now passed the utmost frontier of the white settlements on that border. It was drawing on towards the close of day, the skies serene and calm, the air temperately cool, and gentle zephyrs breathing through the fragrant pine; the prospect around enchantingly varied and beautiful; endless green savannahs, chequered with coppices of fragrant shrubs, filled the air with the richest perfume. The gaily attired plants which enamelled the green had begun to imbibe the pearly dew of evening; nature seemed silent, and nothing appeared to ruffle the happy moments of evening contemplation; when, on a sudden, an Indian appeared crossing the path, at a considerable distance before me. On perceiving that he was armed with a rifle, the first sight of him startled me, and I endeavoured to elude his sight, by stopping my pace, and keeping large trees between us; but he espied me, and turning short about, set spurs to his horse, and came up on full gallop. I never before this was afraid at the sight of an Indian, but at this time, I must own that my spirits were much agitated: I saw at once, that being unarmed, I was in his power; and having now but a few moments to prepare, I resigned myself entirely to the will of the Almighty, trusting to his mercies for my preservation: my mind then became tranquil, and I resolved to meet the dreaded foe with resolution and cheerful confidence. The intrepid Siminole stopped suddenly, three or four yards before me, and silently viewed me, his countenance angry and fierce, shifting his rifle from shoulder to shoulder, and looking about instantly on all sides. I advanced towards him, and with an air of confidence offered him my hand, hailing him, brother; at this he hastily jerked back his arm, with a look of malice, rage, and disdain, seeming every way discontented; when again looking at me more attentively, he instantly spurred up to me, and with dignity in his look and action, gave me his hand. Possibly the silent language of his soul, during the moment of suspense, (for I believe his design was to kill me when he first came up,) was after this manner: "White man, thou art my enemy, and thou and thy brethren may have killed mine; yet it may not be so, and even were that the case, thou art now alone, and in my power. Live; the great Spirit forbids me to touch thy life; go to thy brethren, tell them thou sawest an Indian in the forests, who knew how to be humane and compassionate." In fine, we shook hands, and parted in a friendly manner, in the midst of a dreary wilderness; and he informed me of the course and distance to the trading-house, where I found he had been extremely ill treated the day before.

I now sat forward again, and after eight or ten miles riding, arrived at the banks of St. Mary's, opposite the stores, and got safe over before dark. The river is here about one hundred yards across, has ten feet water, and, following its course, about sixty miles to the sea, though but about twenty miles by land. The trading company here received and treated me with great civility. On relating my adventures on the road, particularly the last with the Indian, the chief re-

objects of his search, not only in noticing the more common, but scrutinizing every plant which appeared new to him, or would be rare to others interested in the botanical kingdom. His researches, as before stated, attracted the notice of some of the chief men of London, among whom was Sir Joseph Banks, President of the Royal Society; this nobleman, (whether for himself or the Society over which he presided, is not precisely known,) wishing to avail himself of the services of our traveller, offered him *one shilling sterling* for every new plant which he might discover in these southern districts, which offer drew the following laconic answer:

"William Bartram, in answer to Joseph Banks' proposal, says, that there are not over five hundred species of plants altogether in the provinces of Virginia, North Carolina, South Carolina, West and East Florida, and Georgia, which, at one shilling each, amounts only to £25—supposing every thing acceptable. It has taken him two years to search only part of the two last provinces, and finds by experience it cannot be done with tolerable conveniency for less than £100 a year, therefore it cannot reasonably be expected that he can accept the offer."

Mr. Bartram was occupied five years in these researches, during which period he discovered a large number of new plants, and contributed most extensive information relative to the natural history of the country; he was the first American ornithologist, and his table of birds was regarded as the only correct list extant, in which two hundred and fifteen different species are enumerated; this table is to be found in his work, page 285, of the Dublin edition.

After his return home, he devoted himself still more closely to science; and in April, 1782, he was elected Professor of Botany in the University of Pennsylvania, but declined serving in consequence of the impaired state of his health; he was also elected a member of several other scientific institutions in the city of Philadelphia.

In 1776, just at the commencement of the Revolutionary War, and while on his return from Florida to Georgia, Mr. Bartram volunteered and joined a detachment of men, raised by Gen. Lochlan McIntosh, to repel a supposed invasion of that state from St. Augustine by the British; he was offered a lieutenant's commission if he would remain, but the report which led him to volunteer his services having proved false, the detachment was disbanded, and Mr. Bartram resumed his travels. Mr. Bartram possessed a full share of republican principles, which were imbibed at a very early age, the first impressions being given when at school by his tutor, Charles Thomson, afterwards Secretary to Congress during the revolution; and Mr. Bartram was frequently heard to say, how careful Mr. Thomson was, on every possible occasion, to instil republican principles into the minds of his youthful pupils.

As a writer, Mr. Bartram, at times, was graphic, and generally delineated things as he saw them, although here and there some extravagant or enthusiastic remarks accompany his descriptions, yet, upon the whole, he was easy, intelligent, and instructive; he was often placed in unpleasant and sometimes perilous circumstances during his travels; and his account of the alligators and frequent encounters with them, cannot be read without the most thrilling interest.(2) Indeed, so powerful were the impres-

plied, with a countenance that at once bespoke surprise and pleasure, "My friend, consider yourself a fortunate man: 'that fellow,' said he, 'is one of the greatest villains on earth, a noted murderer, and outlawed by his countrymen. Last evening he was here, we took his gun from him, broke it in pieces, and gave him a severe drubbing; he, however, made his escape, carrying off a new rifle gun, with which, he said, going off, he would kill the first white man he met.'"

On seriously contemplating the behaviour of this Indian towards me, so soon after his ill treatment, the following train of sentiments insensibly crowded in upon my mind:

Can it be denied, but that the moral principle, which directs the savages to virtuous and praiseworthy actions, is natural or innate? It is certain they have not the assistance of letters, or those means of education in the schools of philosophy, where the virtuous sentiments and actions of the most illustrious characters are recorded, and carefully laid before the youth of civilized nations: therefore this moral principle must be innate, or they must be under the immediate influence and guidance of a more divine and powerful preceptor, who, on these occasions, instantly inspires them, and, as with a ray of divine light, points out to them at once the dignity, propriety, and beauty of virtue.

(2) The evening was temperately cool and calm. The crocodiles began to roar and appear in uncommon numbers along the shores and in the river. I fixed my camp in an open plain, near the utmost projection of the promontory, under the shelter of a large live oak, which stood on the highest part of the ground, and but a few yards from my boat. From this open, high situation, I had a free prospect of the river, which was a matter of no trivial consideration to me, having good reason to dread the subtle attacks of the alligators, who were crowding about my harbour. Having collected a good quantity of wood for the purpose of keeping up a light and smoke during the night, I began to think of preparing my supper, when, upon examining my stores, I found but a scanty provision. I thereupon determined, as the most expeditious way of supplying my necessities, to take my bob and try for some trout. About one hundred yards above my harbour began a cove or bay of the river, out of which opened a large lagoon. The mouth or entrance from the river to it was narrow, but the waters soon afterwards spread and formed a little lake, extending into the marshes: its entrance and shores within I observed to be verged with floating lawns of the pistia and nymphea, and other aquatic plants; these I knew were excellent haunts for trout.

sions left on Mr. Bartram by these unpleasant occurrences, that he never could entirely divest himself of them, and years after they had passed, he was heard to say, that he was often startled from his sleep by violent and hideous dreams of his encounters with these monsters.

The difficulties under which the lamented Wilson laboured, in the commencement and progress of his work, were, at times, almost insurmountable, and had nigh terminated his labours in the cause of ornithology; but in Mr. Bartram he found a friend, an undeviating friend, on whose counsel and guidance he always relied with filial

The verges and islets of the lagoon were elegantly embellished with flowering plants and shrubs; the laughing coots with wings half spread were tripping over the little coves and hiding themselves in the tufts of grass; young broods of the painted summer teal, skimming the still surface of the waters, and following the watchful parent unconscious of danger, were frequently surprised by the voracious trout; and he, in turn, as often by the subtle greedy alligator. Behold him rushing forth from the flags and reeds. His enormous body swells. His plaited tail brandished high, floats upon the lake. The waters like a cataract descend from his opening jaws. Clouds of smoke issue from his dilated nostrils. The earth trembles with his thunder. When immediately from the opposite coast of the lagoon, emerges from the deep his rival champion. They suddenly dart upon each other. The boiling surface of the lake marks their rapid course, and a terrific conflict commences. They now sink to the bottom folded together in horrid wreathes. The water becomes thick and discoloured. Again they rise, their jaws clap together, re-echoing through the deep surrounding forests. Again they sink, when the contest ends at the muddy bottom of the lake, and the vanquished makes a hazardous escape, hiding himself in the muddy turbulent waters and sedge on a distant shore. The proud victor exulting returns to the place of action. The shores and forests resound his dreadful roar, together with the triumphing shouts of these plaited tribes around, witnesses of the horrid combat.

My apprehensions were highly alarmed after being a spectator of so dreadful a battle. It was obvious that every delay would but tend to increase my dangers and difficulties, as the sun was near setting, and the alligators gathered around my harbour from all quarters. From these considerations I concluded to be expeditious in my trip to the lagoon, in order to take some fish. Not thinking it prudent to take my fusee with me, lest I might lose it overboard in case of a battle, which I had every reason to dread before my return, I therefore furnished myself with a club for my defence, went on board, and penetrating the first line of those which surrounded my harbour, they gave way; but being pursued by several very large ones, I kept strictly on the watch, and paddled with all my might towards the entrance of the lagoon, hoping to be sheltered there from the multitude of my assailants; but ere I had half way reached the place, I was attacked on all sides, several endeavouring to overset the canoe. My situation now became precarious to the last degree: two very large ones attacked me closely, at the same instant, rushing up with their heads and part of their bodies above the water, roaring terribly and belching floods of water over me. They struck their jaws together so close to my ears, as almost to stun me, and I expected every moment to be dragged out of the boat and instantly devoured. But I applied my weapons so effectually about me, though at random, that I was so successful as to beat them off a little; when, finding that they designed to renew the battle, I made for the shore, as the only means left me for my preservation; for, by keeping close to it, I should have my enemies on one side only, whereas I was before surrounded by them; and there was a probability, if pushed to the last extremity, of saving myself, by jumping out of the canoe on shore, as it is easy to outwalk them on land, although comparatively as swift as lightning in the water. I found this last expedient alone could fully answer my expectations, for as soon as I gained the shore, they drew off and kept aloof. This was a happy relief, as my confidence was, in some degree, recovered by it. On recollecting myself, I discovered that I had almost reached the entrance of the lagoon, and determined to veture in, if possible, to take a few fish, and then return to my harbour, while day-light continued; for I could now, with caution and resolution, make my way with safety along shore; and, indeed, there was no other way to regain my camp, without leaving my boat and making my retreat through the marshes and reeds, which, if I could even effect, would have been in a manner throwing myself away, for then there would have been no hopes of ever recovering my bark, and returning in safety to any settlements of men. I accordingly proceeded, and made good my entrance into the lagoon, though not without opposition from the alligators, who formed a line across the entrance, but did not pursue me into it, nor was I molested by any there, though there were some very large ones in a cove at the upper end. I soon caught more trout than I had present occasion for, and the air was too hot and sultry to admit of their being kept for many hours, even though salted or barbecued. I now prepared for my return to camp, which I succeeded in with but little trouble, by keeping close to the shore; yet I was opposed upon re-entering the river out of the lagoon, and pursued near to my landing, (though not closely attacked,) particularly by an old daring one, about twelve feet in length, who kept close after me; and when I stepped on shore, and turned about, in order to draw up my canoe, he rushed up near my feet, and lay there for some time, looking me in the face, his head and shoulders out of water. I resolved he should pay for his temerity, and having a heavy load in my fusee, I ran to my camp, and returning with my piece, found him with his foot on the gunwale of the boat, in search of fish, On my coming up he withdrew sullenly and slowly into the water, but soon returned and placed himself in his former position, looking at me, and seeming neither fearful nor any way disturbed. I soon despatched him by lodging the contents of my gun in his head, and then proceeded to cleanse and prepare my fish for supper; and accordingly took them out of the boat, laid them down on the sand close to the water, and began to scale them; when, raising my head, I saw before me, through the clear water, the head and shoulders of a very large alligator, moving slowly towards me. I instantly stepped back, when, with a sweep of his tail, he brushed off several of my fish. It was certainly most providential that I looked up at that instant, as the monster would, probably, in less than a minute, have seized and dragged me into the river. This incredible boldness of the animal disturbed me greatly, supposing there could now be no reasonable safety for me during the night, but by keeping continually on the watch: I therefore, as soon as I had prepared the fish, proceeded to secure myself and effects in the best manner I could. In the first place, I hauled my bark upon the shore, almost clear out of the water, to prevent their oversetting or sinking her; after this, every movable was taken out and carried to my camp, which was but a few yards off; then ranging some dry wood in such order as was the most convenient, I cleared the ground round about it, that there might be no impediment in my way, in case of an attack

piety. It was through the encouragement and assistance rendered by Mr. Bartram, that Wilson commenced and completed his splendid work on ornithology; and by his constant visits to the rural and delightful grounds of the botanic garden, he first conceived the plan of forming the work; he there also became enamoured of the study, and acquainted with a large number of birds figured in his work; how often in his writings does he allude to his friend, William Bartram, and this enchanting spot, so congenial with his feelings! In a letter to Mr. Bartram on the subject, Wilson says:

"I send you a few more imitations of birds for your opinion

in the night, either from the water or the land; for I discovered by this time, that this small isthmus, from its remote situation and fruitfulness, was resorted to by bears and wolves. Having prepared myself in the best manner I could, I charged my gun and proceeded to reconnoitre my camp and the adjacent grounds; when I discovered that the peninsula and grove, at the distance of about two hundred yards from my encampment, on the land side, were invested by a cypress swamp, covered with water, which below was joined to the shore of the little lake, and above to the marshes surrounding the lagoon; so that I was confined to an islet exceedingly circumscribed, and I found there was no other retreat for me, in case of an attack, but by either ascending one of the large oaks, or pushing off with my boat.

It was by this time dusk, and the alligators had nearly ceased their roar, when I was again alarmed by a tumultuous noise that seemed to be in my harbour, and therefore engaged my immediate attention. Returning to my camp I found it undisturbed, and then continued on to the extreme point of the promontory, where I saw a scene, new and surprising, which at first threw my senses into such a tumult, that it was some time before I could comprehend what was the matter; however, I soon accounted for the prodigious assemblage of crocodiles at this place, which exceeded every thing of the kind I had ever heard of.

How shall I express myself so as to convey an adequate idea of it to the reader, and at the same time avoid raising suspicions of my veracity! Should I say, that the river (in this place) from shore to shore, and perhaps near half a mile above and below me, appeared to be one solid bank of fish, of various kinds, pushing through this narrow pass of St. Juan's into the little lake, on their return down the river, and that the alligators were in such incredible numbers, and so close together from shore to shore, that it would have been easy to have walked across on their heads, had the animals been harmless? What expressions can sufficiently declare the shocking scene that for some minutes continued, whilst this mighty army of fish were forcing the pass? During this attempt, thousands, I may say hundreds of thousands of them were caught and swallowed by the devouring alligators. I have seen an alligator take up out of the water several great fish at a time, and just squeeze them betwixt his jaws, while the tails of the great trout flapped about his eyes and lips, ere he had swallowed them. The horrid noise of their closing jaws, their plunging amidst the broken banks of fish, and rising with their prey some feet upright above the water, the floods of water and blood rushing out of their mouths, and the clouds of vapour issuing from their wide nostrils, were truly frightful. This scene continued at intervals during the night, as the fish came to the pass. After this fight, shocking and tremendous as it was, I found myself somewhat easier and more reconciled to my situation; being convinced that their extraordinary assemblage here was owing to this annual feast of fish; and that they were so well employed in their own element, that I had little occasion to fear their paying me a visit.

It being now almost night, I returned to my camp, where I had left my fish broiling, and my kettle of rice stewing; and having with me oil, pepper and salt, and excellent oranges hanging in abundance over my head, (a valuable substitute for vinegar,) I sat down and regaled myself cheerfully. Having finished my repast, I rekindled my fire for light, and whilst I was revising the notes of my past day's journey, I was suddenly roused with a noise behind me toward the main land. I sprang up on my feet, and listening, I distinctly heard some creature wading in the water of the isthmus. I seized my gun, and went cautiously from my camp, directing my steps towards the noise: when I had advanced about thirty yards, I halted behind a coppice of orange trees, and soon perceived two very large bears, which had made their way through the water, and had landed in the grove, about one hundred yards distance from me, and were advancing towards me. I waited until they were within thirty yards of me: they there began to snuff and look towards my camp: I snapped my piece, but it flashed, on which they both turned about and galloped off, plunging through the water and swamp, never halting, as I suppose, until they reached fast land, as I could hear them leaping and plunging a long time. They did not presume to return again, nor was I molested by any other creature, except being occasionally awakened by the whooping of owls, screaming of bitterns, or the wood-rats running amongst the leaves.

The noise of the crocodiles kept me awake the greater part of the night; but when I arose in the morning, contrary to my expectations there was perfect peace; very few of them to be seen, and those were asleep on the shore. Yet I was not able to suppress my fears and apprehensions of being attacked by them in future; and, indeed, yesterday's combat with them, notwithstanding I came off in a manner victorious, or at least made a safe retreat, had left sufficient impression on my mind to damp my courage; and it seemed too much for one of my strength, being alone in a very small boat, to encounter such collected danger. To pursue my voyage up the river, and be obliged every evening to pass such dangerous defiles, appeared to me as perilous as running the gauntlet betwixt two rows of Indians armed with knives and firebrands. I however resolved to continue my voyage one day longer, if I possibly could with safety, and then return down the river, should I find the like difficulties to oppose. Accordingly I got every thing on board, charged my gun, and set sail cautiously, along shore. As I passed by Battle lagoon, I began to tremble and keep a good look out; when suddenly a huge alligator rushed out of the reeds, and with a tremendous roar came up, and darted as swift as an arrow under my boat, emerging upright on my lee quarter, with open jaws, and belching water and smoke that fell upon me like rain in a hurricane. I laid soundly about his head with my club and beat him off; and after plunging and darting about my boat, he went off on a straight line through the water, seemingly with the rapidity of lightning, and entered the cape of the lagoon. I now employed my time to the very best advantage in paddling close along shore, but could not forbear looking now and then behind me, and presently perceived one of them coming up again. The water of the river hereabouts was shoal and very clear: the monster came up with the usual roar and menaces, and passed close by the side of my boat, when I could distinctly see a young brood of alligators, to the number of one hundred or more, following after her in a long train. They kept close together in a

and correction, which I value beyond those of any body else, although I am seriously apprehensive that I am troublesome; these are the last I shall draw for some time, as it consumes every leisure moment I have, leaving nothing for friendship or the rural recreations I so much delight in."

On another occasion the same writer again addresses Mr. Bartram:

"The receipt of yours, of the 11th inst., (April, 1807,) in which you approve of my intended publication of American Ornithology, gave me much satisfaction; and your promise of befriending me in the arduous attempt commands my unfeigned gratitude. From the opportunities I have lately had of examining into the works of Americans who have treated of this part of our natural history, I am satisfied that none of them have bestowed such minute attention on the subject as you yourself have done. Indeed, they have done little more than copied your no-

column without straggling off to the one side or the other; the young appeared to be of an equal size, about fifteen inches in length, almost black, with pale yellow transverse waved clouds or blotches, much like rattlesnakes in colour. I now lost sight of my enemy again.

Still keeping close along shore, on turning a point or projection of the river bank, at once I beheld a great number of hillocks or small pyramids, resembling hay-cocks, ranged like an encampment along the banks. They stood fifteen or twenty yards distant from the water, on a high marsh, about four feet perpendicular above the water. I knew them to be the nests of the crocodile, having had a description of them before; and now expected a furious and general attack, as I saw several large crocodiles swimming abreast of these buildings. These nests being so great a curiosity to me, I was determined at all events immediately to land and examine them. Accordingly, I ran my bark on shore at one of their landing-places, which was a sort of nick or little dock, from which ascended a sloping path or road up to the edge of the meadow, where their nests were; most of them were deserted, and the great thick whitish egg-shells lay broken and scattered upon the ground round about them.

The nests or hillocks are of the form of an obtuse cone, four feet high and four or five feet in diameter at their bases; they are constructed with mud, grass, and herbage. At first they lay a floor of this kind of tempered mortar on the ground, upon which they deposit a layer of eggs, and upon this a stratum of mortar, seven or eight inches in thickness, and then another layer of eggs, and in this manner one stratum upon another, nearly to the top. I believe they commonly lay from one to two hundred eggs in a nest: these are hatched, I suppose, by the heat of the sun; and perhaps the vegetable substances mixed with the earth, being acted upon by the sun, may cause a small degree of fermentation, and so increase the heat in those hillocks. The ground for several acres about these nests showed evident marks of a continual resort of alligators; the grass was every where beaten down, hardly a blade or straw was left standing; whereas, all about, at a distance, it was five or six feet high, and as thick as it could grow together. The female, as I imagine, carefully watches her own nest of eggs until they are all hatched; or perhaps while she is attending her own brood, she takes under her care and protection as many as she can get at one time, either from her own particular nest or others; but certain it is, that the young are not left to shift for themselves; for I have had frequent opportunities of seeing the female alligator leading about the shores her train of young ones, just as a hen does her brood of chickens; and she is equally assiduous and courageous in defending the young, which are under her care, and providing for their subsistence; and when she is basking upon the warm banks, with her brood around her, you may hear the young ones continually whining and barking, like young puppies. I believe but few of a brood live to the years of full growth and magnitude, as the old feed on the young as long as they can make prey of them.

The alligator, when full grown, is a very large and terrible creature, and of prodigious strength, activity, and swiftness in the water. I have seen them twenty feet in length, and some are supposed to be twenty-two or twenty-three feet. Their body is as large as that of a horse; their shape exactly resembles that of a lizard, except their tail, which is flat or cuneiform, being compressed on each side, and gradually diminishing from the abdomen to the extremity, which, with the whole body, is covered with horny plates or squammæ, impenetrable when on the body of the live animal, even to a rifle-ball, except about their head and just behind their fore legs or arms, where, it is said, they are only vulnerable. The head of a full-grown one is about three feet, and the mouth opens nearly the same length; their eyes are small in proportion, and seem sunk deep in the head, by means of the prominency of the brows; the nostrils are large, inflated and prominent on the top, so that the head in the water resembles, at a distance, a great chunk of wood floating about. Only the upper jaw moves, which they raise almost perpendicular, so as to form a right angle with the lower one. In the fore-part of the upper jaw, on each side, just under the nostrils, are two very large, thick, strong teeth or tusks, not very sharp, but rather the shape of a cone: these are as white as the finest polished ivory, and are not covered by any skin or lips, and always in sight, which gives the creature a frightful appearance: in the lower jaw are holes opposite to these teeth, to receive them: when they clap their jaws together it causes a surprising noise, like that which is made by forcing a heavy plank with violence upon the ground, and may be heard at a great distance.

But what is yet more surprising to a stranger, is the incredible loud and terrifying roar, which they are capable of making, especially in the spring season, their breeding time. It most resembles very heavy distant thunder, not only shaking the air and waters, but causing the earth to tremble; and when hundreds and thousands are roaring at the same time, you can scarcely be persuaded, but that the whole globe is violently and dangerously agitated.

An old champion, who is, perhaps, absolute sovereign of a little lake or lagoon, (when fifty less than himself are obliged to content themselves with swelling and roaring in little coves round about,) darts forth from the reedy coverts all at once, on the surface of the waters, in a right line; at first seemingly as rapid as lightning, but gradually more slowly until he arrives at the centre of the lake, when he stops. He now swells himself by drawing in wind and water through his mouth, which causes a loud sonorous rattling in the throat for near a minute, but it is immediately forced out again through his mouth and nostrils, with a loud noise, brandishing his tail in the air, and the vapour ascending from his nostrils like smoke. At other times, when swollen to an extent ready to burst, his head and tail lifted up, he spins or twirls round on the surface of the water. He acts his part like an Indian chief when rehearsing his feats of war; and then retiring, the exhibition is continued by others who dare to step forth, and strive to excel each other, to gain the attention of the favourite female.

menclature and observations, and referred to your authority. To have you, therefore, to consult with in the course of this great publication, I consider a most happy and even auspicious circumstance; and I hope you will, on all occasions, be a rigid censor and kind monitor, whenever you find me deviating from the beauties of nature or the truth of description."

In fact, the rich fund of knowledge possessed by Mr. Bartram, after so many years of application and research, and the simple and unaffected manner in which he imparted instruction to those who sought it of him, made his society agreeable, and courted by the literary, scientific, and others on very many occasions, but by no one more than William Hamilton, Esq., a wealthy and highly respectable citizen of the county of Philadelphia, whose extensive domains bordering on the more humble residence of Mr. Bartram, offered him many opportunities of reaping advantages and pleasure from the instructive knowledge of the latter; Mr. Hamilton himself being fond of the study of botany. Mr. Bartram was a source of reference to many naturalists of his day, and there was scarcely an American or foreign writer who attempted the natural history of this country but applied to him for information on their relative treatises, and in many instances his generous contributions were received and diffused to the world by other writers without giving credit to the proper author.

So great was the fondness of Mr. Bartram for the works of nature, that at the advanced age of 65, he concluded to accompany Mr. Wilson on a short tour, and assist him in his work on ornithology; on this the latter placed much reliance, and his prospects of success became cheering by so valuable a companion; but a long course of inclement weather setting in, prevented the travellers from pursuing their journey on the appointed day. On this occasion Mr. Wilson composed the following stanzas, and sent them to his aged friend in form of a note:

June 16, 1804.

"I believe we had better put off our intended jaunt until some more auspicious day.

"Clouds, from eastern regions driven,
Still obscure the gloomy skies;
Let us yield, since angry heaven
Frowns upon our enterprise.

"Haply some unseen disaster
Hung impending o'er our way,
Which our kind Almighty Master
Saw, and sought us thus to stay.

"By-and-by, when fair Aurora
Bids the drowsy fogs to fly,
And the glorious god of Flora
Rises in a cloudless sky,

"Then, in whirling chariot seated,
With my friend I'll gladly go:
With his converse richly treated—
Happy to be honoured so."

Mr. Bartram was a member of the Society of Friends, but his religious opinions inclined to Unitarianism; his disposition was gentle, and his demeanour meek, but somewhat reserved. Mr. Bartram never married, and therefore had no parental duties to perform, but to those around him, he was always provident, affectionate, and kind, and benevolent to others. In stature he was below the middling size; his general health was good, although his constitution was not robust. Habituated to the study of nature, he saw nothing but mildness and harmony in all her works, and, viewing them with that philosophy which exalts and leads the mind to the contemplation of the great first cause of all, he had imparted to his feelings the serenity which was so remarkable throughout his life; this, supporting his constitution, and being exceedingly temperate in all his habits, his days were numbered beyond the boundary common to human life.

A few minutes before his death he wrote an article on the natural history of a plant, and, in rising from his desk to take a morning survey of the botanic grounds, he had proceeded only a few steps from his door when he burst a blood-vessel, which suddenly closed his useful life July 22d, 1823, in the 85th year of his age.

EMBELLISHMENTS

TO

VOLUME II.

PORTRAIT OF WILLIAM BARTRAM.

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THE

CABINET OF NATURAL HISTORY,

AND

AMERICAN RURAL SPORTS.

THE HORSE.

EQUUS CABALLUS.

[Plate I. Vol. 2.]

From the very exalted station which the noble animal, the Horse, holds with man, a concise history of the various breeds of horses, may be interesting and worthy of attentive perusal; we have accordingly made selections on this head, from a variety of authors, eminent as naturalists and travellers, and embracing, we believe, almost every species known.

Of all brute animals in a state of association with the human race, the Horse occupies the first and most important rank. He forms an indispensable link in the chain of Creation: without him, nature's system and human enjoyments had been incomplete. He contributes equally to the services, luxuries, and pleasures of man. Whether it be laboriously to till the soil, as an associate with the patient ox, to carry the heaviest burdens, or to perform the longest and most painful journies, the Horse is the ready and obedient slave of his master. Nature has endowed this her favourite animal with a degree of intelligence and a generous inclination to obedience, which render him highly susceptible of education. His form and qualities are admirably adapted by the Eternal and Unerring Artist, to the particular rank he is intended to fill in the scale of being. He is either fashioned to sustain heavy burdens, and to endure the coarsest drudgery, or endued with that just and beautiful symmetry of form and delicacy of skin, which convey to the critical and scientific view, ideas of perfection, and which are harbingers of the highest degree of quadrupedal activity and speed. His full eye beams with mildness and generosity, or sparkles with the fire of courage, energy, and action. In war, he offers a dauntless front to the greatest dangers, engaging in the mortal strife and clangor of battle, unappalled, and as actuated by an undivided and equal interest with his rider. In the field and on the course, he exhibits a speed, and power of continuance, a firmness of nerve, a strength of muscle and elasticity of sinew, of which no other animal of the creation is capable; bearing his rider along, over plains, hills, and vallies, as if impelled by supernatural energy: but all descriptions of the Horse must give place to that inspired one of Job, which has elevated and delighted the minds of men of all ages and all nations:—

"Hast thou given the Horse strength? Hast thou clothed his neck with thunder? Canst thou make him afraid as a grasshopper? The glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength. He goeth on to meet the armed men. He mocketh at fear, and is not affrighted: neither turneth he his back from the sword. The quiver rattleth against him, the glittering spear and the shield. He swalloweth the ground with fierceness and rage: neither believeth he that it is the sound of the trumpet. He sayeth among the trumpets, ha! ha! and he smelleth the battle afar off, the thunder of the captains, and the shouting."

Job was a native of those desarts, to which is indigenous that fine and delicate model of the horse genus, from his superior speed, styled the Courser. These beautiful animals are supposed to have originated in the desarts of Arabia, of Barbary, and of some other parts of Africa, and from those to have migrated to the circumjacent countries. Granting this to be supposition, it is confirmed by an unbroken evidence of facts during thousands of years, recourse being invariably had to those desarts for supplies of this matchless race: but there exists no record of sufficient antiquity to reach the first example of taming the horse, since the most ancient histories represent him as already inured to the service of man.

The noblest conquest which was ever made by man is that of this spirited and haughty animal, which shares with him the fatigues of war and the glory of the combat. Equally intrepid as his master, the Horse sees the danger, and braves it; inspired at the clash of arms, he loves it,

he seeks it, and is animated with the same ardour. He feels pleasure also in the chase, in tournaments, in the course; he is all fire, but, equally tractable as courageous, does not give way to his impetuosity, and knows how to check his inclinations; he not only submits to the arm which guides him, but even seems to consult the desires of his rider; and, always obedient to the impressions which he receives from him, presses on, moves gently, or stops, and only acts as his rider pleases. The Horse is a creature which renounces his being, to exist only by the will of another, which he knows how to anticipate, and even express, and execute by the promptitude and exactness of his movements: he feels as much as we desire, does only what we wish, giving himself up without reserve, and refuses nothing, makes use of all his strength, exerts himself beyond it, and even dies the better to obey us.

Such is the Horse, whose natural qualities art has improved. His education commences with the loss of his liberty, and by constraint it is finished. The slavery or servitude of these creatures is universal, and so ancient that we rarely see them in their natural state: they are never wholly free from all their bands, not even at the time of rest; and if they are sometimes suffered to range at liberty in the fields, they always bear about them tokens of servitude, and frequently the cruel marks of servitude and of pain: the mouth is deformed by the wrinkles occasioned by the bit, the flanks scarred with wounds inflicted by the spur, the hoofs are pierced by nails, the attitude of the body constrained, from the subsisting impression of habitual shackles, from which they would be delivered in vain, as they would not be the more at liberty for it. Even those whose slavery is the most gentle, who are only fed and broken for luxury and magnificence, and whose golden chains serve less to decorate them, than to satisfy the vanity of their master, are still more dishonoured by the elegance of their trappings, by the tresses of their manes, by the gold and silk with which they are covered, than by the iron shoes on their feet.

Nature is more delightful than art; and, in an animated being, the freedom of its movements makes nature beautiful: observe the Horses in Spanish America, which live wild; their gait, their running, or their leaping, seem neither constrained nor regular. Proud of their independence, they fly the presence of man, and disdain his care; they seek and find for themselves proper nourishment; they wander about in liberty in immense meads, where they feed on the fresh productions of an eternal spring: destitute of any fixed habitation, without any other shelter than a mild sky, they breathe a purer air than those which are confined in vaulted palaces. These wild Horses are also much stronger, much swifter, and more nervous than the greater part of domestic Horses; they have, what nature has bestowed upon them, strength and nobleness; the others only what art can give, beauty and cunning.

The Wild Horse.

Troops of wild Horses are found in the plains of Great Tartary, and also in several parts of South America. In neither, however, can we recognise an original race. The horses of the Ukraine, and those of South America, are equally the descendants of those who had escaped from the slavery of man. The Tartar Horses are fleet and strong, but comparatively of an ordinary breed. Those of South America retain, almost unimpaired, the size and form of their European ancestors.

In no part of America, or of the more newly-discovered islands of the Pacific, was the Horse known, until he was introduced by Europeans; and the origin of the Horses of Tartary, has been clearly traced to those who were employed in the siege of Azoph, in 1657, but which were turned loose for want of forage.

All travellers, who have crossed the plains extending from the shores of La Plata to Patagonia, have spoken of numerous droves of wild Horses. Some affirm that they have seen ten thousand in one troop. They appear to be under the command of a leader, the strongest and boldest of the herd, and whom they implicitly obey. A secret instinct teaches them that their safety consists in their union, and in a principle of subordination. The lion, the tiger, and the leopard,* are their principal enemies. At some signal, intelligible to them all, they either close into a dense mass, and trample their enemy to death; or, placing the mares and foals in the centre, they form themselves into a circle and welcome him with their heels. In the attack, their leader is the first to face the danger, and, when prudence demands a retreat, they follow his rapid flight.

In the thinly inhabited parts of South America, it is dangerous to fall in with any of these troops. The wild Horses approach as near as they dare: they call to the loaded Horse with the greatest eagerness, and, if the rider be not on the alert, and have not considerable strength of arm, and sharpness of spur, his beast will divest himself of his burden, take to his heels, and be gone for ever.

Captain Head gives the following account of a meeting with a troop of wild Horses, where the country is more thickly inhabited. Some poor captured animals are supposed to be forced along by their riders at their very utmost speed:—"As they are thus galloping along, urged

* These animals are of a different race from those which go under the same names in the Old World, and are very inferior in strength.

by the spur, it is interesting to see the groups of wild Horses one passes. The mares, which are never ridden in South America, seem not to understand what makes the poor Horse carry his head so low, and look so weary.* The little innocent colts come running to meet him, and then start away frightened: while the old Horses, whose white marks on the flanks and backs betray their acquaintance with the spur and saddle, walk slowly away for some distance, then, breaking into a trot as they seek their safety, snort and look behind them, first with one eye and then with the other, turning their nose from right to left, and carrying their long tail high in the air."

The same pleasing writer describes the system of horse-management among the rude inhabitants of the plains of South America. They have no stables, no fenced pastures. One Horse is usually kept tied at the door of the hut, fed scantily at night on maize; or at other times several may be enclosed in the *corral*, which is a circular space surrounded by rough posts, driven firmly into the ground. The mares are never ridden, or attempted to be tamed, but wander with their foals wherever they please.

When the *Gaucho*, the native inhabitants of the plains, wants horses for himself or for the supply of the traveller, he either goes with his *lasso* to the *corral*, and selects those, possibly, who on the preceding day had for the first time been backed, or he scampers across the plain, and presently returns with an unwilling, struggling, or subdued captive. When the services of the animals have been exacted, he either takes them to the *corral*, and feeds them with a small quantity of maize, if he thinks he shall presently need them again, or he once more turns them loose on the plains.

Travellers give some amusing accounts of the manner in which all this is effected—Miers thus describes the *lasso*, simple in its construction, but all-powerful in the hands of the Gaucho.

"The *Lasso* is a missile weapon used by every native of the United Provinces and Chile. It is a very strong plaited thong of equal thickness, half an inch in diameter, and forty feet long; made of many strips of green hide, plaited like a whipthong, and rendered supple by grease. It has, at one end, an iron ring above an inch and a half in diameter, through which the thong is passed, and this forms a running noose. The Gaucho, or native Peon, is generally mounted on horseback when he uses the lasso. One end of the thong is affixed to his saddle girth: the remainder he coils carefully in his left hand, leaving about twelve feet belonging to the noose-end, in a coil, and a half of which he holds in his right hand. He then swings this long noose horizontally round his head, the weight of the iron ring at the end of the noose assisting in giving to it, by a continued circular motion, a sufficient force to project it the whole length of the line."

When the Gauchos wish to have a grand breaking-in, they drive a whole herd of wild horses into the corral. "The corral was quite full of Horses," says Captain Head, "most of which were young ones about two or three years old. The *capitaz* (chief Gaucho,) mounted on a strong steady Horse, rode into the corral and threw his lasso over the neck of a young Horse, and dragged him to the gate. For some time he was very unwilling to leave his comrades; but the moment he was forced out of the corral, his first idea was to gallop away: however a timely jerk of the lasso checked him in the most effectual way. The peons now ran after him on foot, and threw a lasso over his fore-legs just above the fetlock, and twitching it, they pulled his legs from under him so suddenly, that I really thought the fall he got had killed him. In an instant a Gaucho was seated on his head, and with his long knife, and in a few seconds, cut off the whole of the Horse's mane, while another cut the hair from the end of his tail. This they told me was a mark that the Horse had been once mounted. They then put a piece of hide into his mouth to serve for a bit, and a strong hide halter on his head. The Gaucho who was to mount, arranged his spurs, which were unusually long and sharp,* and while two men held the Horse by his ears, he put on the saddle, which he girthed extremely tight. He then caught hold of the Horse's ear, and in an instant vaulted into the saddle; upon which the man who held the Horse by the halter threw the end to the rider, and from that moment no one seemed to take any further notice of him.

"The Horse instantly began to jump in a manner which made it very difficult for the rider to keep his seat, and quite different from the kick or plunge of an English Horse: however, the Gaucho's spurs soon set him going, and off he galloped doing everything in his power to throw his rider.

* An Englishman once attempted to ride a mare, but he was hooted and pelted by the natives, and thought himself fortunate to escape without serious injury.

Sir John Carr, in his Northern Summer, p. 44, states that it is only a short time since mares began to be ridden in Russia.

* The manufacture of the Gaucho's boots is somewhat singular. "The boots of the Gauchos are formed of the ham and part of the leg-skin of a colt taken reeking from the mother, which is said to be sacrificed for the sole purpose, just at the time of bearing when the hair has not begun to grow. At this stage, the skin strips off easily, and is very white and beautiful in texture and appearance. The ham forms the calf of the boot; the hock easily adopts itself to the heel, and the leg above the fetlock constitutes the foot; the whole making a neat and elegant half-boot, with an aperture sufficient for the great toe, to project through."—Andrew's Journey in South America, vol. i. p. 26.

"Another Horse was immediately brought from the corral, and so quick was the operation, that twelve Gauchos were mounted in a space which I think hardly exceeded an hour. It was wonderful to see the different manner in which different Horses behaved. Some would actually scream while the Gauchos were girding the saddle upon their backs; some would instantly lie down and roll upon it; while some would stand without being held—their legs stiff, and in unnatural positions, their necks half bent towards their tails, and looking vicious and obstinate; and I could not help thinking that I would not have mounted one of those for any reward that could be offered me, for they were invariably the most difficult to subdue.

"It was now curious to look around and see the Gauchos on the horizon in different directions, trying to bring their Horses back to the corral, which is the most difficult part of their work; for the poor creatures had been so scared there that they were unwilling to return to the place. It was amusing to see the antics of the Horses—they were jumping and dancing in different ways, while the right arm of the Gauchos was seen flogging them. At last they brought the Horses back, apparently subdued, and broken in. The saddles and bridles were taken off, and the young Horses trotted off towards the corral, neighing to one another.

"The Horses of the Pampas are like the common description of Spanish Horse, but rather stronger. They are of all colours, and a great number are pie-bald. When caught, they will always kick at any person who goes behind them; and it is often with great difficulty that they can be bridled and saddled: however, they are not vicious, and when properly broken in, will allow the children to mount by climbing up their tails. In mounting, it is necessary to be very quick, and previous to dismounting, it is proper to throw the bridle over one side of the head, as the Horses almost always run backwards, if one attempts to hold them by the bridle when it is over the head, as in England.

"Although I rode many thousand miles in South America, I was quite unable to learn how to select either a good Horse or an easy-going one, for by their appearance I found it impossible to form a judgment; indeed, I generally selected for myself the worst-looking Horses, as I sometimes fancied that they went the best.

"When first mounted, they often begin to kick and plunge, but by giving them a loose rein, and by spurring them, they will generally start, and when once at their pace, they go quiet. However, the kicking at starting is a most painful operation to undergo, for from hard riding the back and shoulders get so dreadfully stiff, that such sudden and violent motion seems to dislocate the limbs."

When the Gaucho wishes to take a wild Horse, he mounts one that has been used to the sport, and gallops over the plain. As soon as he comes sufficiently near his prey, "the lasso is thrown round the two hind legs, and as the Gaucho rides a little on one side, the jerk pulls the entangled horse's feet laterally, so as to throw him on his side, without endangering his knees or his face. Before the Horse can recover the shock, the rider dismounts, and snatching his *poncho* or cloak from his shoulders, wraps it round the prostrate animal's head. He then forces into his mouth one of the powerful bridles of the country, straps a saddle on his back, and bestriding him, removes the poncho; upon which the astonished horse springs on his legs, and endeavours by a thousand vain efforts to disencumber himself of his new master, who sits quite composedly on his back, and, by a discipline which never fails, reduces the Horse to such complete obedience, that he is soon trained to lend his whole speed and strength to the capture of his companions.

"These animals possess much of the form of the Spanish Horse, from which they sprung; they are tamed, as has been seen, with far less difficulty than could be thought possible; and, although theirs is the obedience of fear, and enforced at first by the whip and spur, there are no Horses who so soon and so perfectly exert their sagacity and their power in the service of man. They are possessed of no extraordinary speed, but they are capable of enduring immense fatigue. They are frequently ridden sixty or seventy miles without drawing bit, and have been urged on by the cruel spur of the Gaucho, more than a hundred miles, and at the rate of twelve miles in the hour.

"Like the Arab Horses, they know no intermediate pace between the walk and the gallop. Although at the end of a day so hard, their sides are horribly mangled, and they completely exhausted, there is this consolation for them, they are immediately turned loose on the plains, and it will be their own fault if they are speedily caught again. The mare is occasionally killed for food, and especially on occasions of unusual festivity. General San Martin, during the war for independence, gave a feast to the Indian allies attached to his army; and mares' flesh, and the blood mixed with gin, formed the whole of the entertainment.

"On such dry and sultry plains the supply of water is often scanty, and then a species of madness seizes on the Horses, and their generous and docile qualities are no longer recognized. They rush violently into every pond and lake, savagely mangling and trampling upon one another; and the carcases of many thousands of them destroyed by their fellows, have occasionally been seen in and around a considerable pool. This is one of the means by which the too rapid increase of this quadruped is, by the ordinance of Nature, there prevented.

"The wild Horses of TARTARY, although easily domesticated, materially differ in character from those on the plains of South America. They will not suffer a stranger to join them. If a domesticated Horse comes in their way, unprotected by his master, they attack him with their teeth and their heels, and speedily destroy him. They readily submit, however, to the dominion of man, and become perfectly docile and faithful.

"Among the Tartars, the flesh of the Horse is a frequent article of food; and although they do not, like the Indians of the Pampas, eat it raw, their mode of cookery would not be very inviting to the European epicure. They cut the muscular parts into slices, and place them under their saddles, and after they have galloped thirty or forty miles, the meat becomes tender and sodden, and fit for their table; and, at all their feasts, the first and last and most favourite dish, is a Horse's head.

"When water was not at hand, the Scythians used to draw blood from their Horses and drink it; and the dukes of Muscovy, for nearly two hundred and sixty years, presented Tartar ambassadors with the milk of mares. If any of this milk fell upon the mane of the Horse, the duke, by custom, was bound to lick it off."

In North America, innumerable wild Horses were seen by Lieut. Z. M. Pike, while on his exploring expedition to the sources of the Arkansas River, &c.; they were met with continually on the shores of most of the rivers in the Arkansas Territories, the first herd being seen in Lat. 37° Long. 38°.

"The natural disposition of these animals is not ferocious, they are only high-spirited and wild; and though superior in strength to the greatest part of animals, they yet never attack them; and if they are attacked by others, either disdain them or trample them under their feet. They go also in bodies, and unite themselves into troops, merely for the pleasure of being together, for they are not fearful of, but have an attachment to each other. As herbs and vegetables are sufficient for their nourishment, they have quite enough to satisfy their appetite; and as they have no relish for the flesh of animals, they never make war with them, nor with each other; they never quarrel about their food, they have no occasion to ravish the prey of another, the ordinary source of contentions and quarrels among carniverous animals. They live in peace because their appetite is simple and moderate; and as they have enough, there is no room for envy.

"As all parts of Europe are at present peopled, and almost equally inhabited, wild Horses are no longer found there; and those which we see in America were originally European tame Horses, which have multiplied in the vast desarts of that country. The astonishment and fear which the inhabitants of Mexico and Peru expressed at the sight of Horses, and their riders, convinced the Spaniards that this animal was entirely unknown in these countries; they therefore carried thither a great number, as well for service and their particular utility as to propagate the breed. M. de la Salle, in 1685, saw in the northern parts of America, near the bay of St. Louis, whole troops of these wild Horses feeding in the pastures, which were so fierce that no one dared to approach them. The author of the History of the Adventures of the Buccaneers, says that, in the island of St. Domingo, Horses may sometimes be seen in troops of upwards of five hundred, all running together, and that as soon as they see a man, they will all stop; that one of them will approach to a certain distance, snort, take flight, and then all the rest will follow him. To catch them, they make use of nooses made of ropes, which they spread and hang in places which they know they frequent: but if they are caught by the neck they strangle themselves, unless the hunter comes time enough to their assistance, who instantly secures them by the body and legs, and fastens them to trees, where they are left for two days without either food or drink. This experiment is sufficient to begin to make them tractable, and in time they become as much so as if they had never been wild; and even if by chance they ever regain their liberty, they never become so again, but know their masters, and suffer them to catch them again without trouble.

"The manners of these animals almost wholly depend on their education. From time immemorial it has been the custom to separate the colts from their mothers: mares are suffered to suckle them five, six, or seven months; for experience has taught us, that those colts which are suckled ten or eleven months, are not of equal value with those which are weaned sooner, though they are generally fuller of flesh. After six or seven months sucking, they are weaned, that they may take more solid nourishment than milk; bran is then given them twice a day, and a little hay, of which the quantity is increased in proportion as they advance in age, and they are kept in the stable as long as they seem to retain any desire to return to the mare; but when this desire ceases, they are suffered to go out in fine weather, and led to pasture; but care must be taken not to suffer them to go out to pasture fasting; they must have bran, and be made to drink, an hour before they are suffered to graze, and are never to be exposed to great cold or rain: in this manner they spend the first winter; in the May following, they are not only permitted to graze every day, but are suffered to lie in the fields all the summer, and even to the end of October, only observing not to let them eat the after-grass; for

if they accustom themselves much to it, they will grow disgusted with hay, which ought, however, to be their principal food during the second winter, together with bran mixed with barley, or oats wetted. They are managed in this manner, letting them graze in the day time during winter, and in the night time during the summer, till they are four years old, when they are taken from the pastures, and fed on hay. This change in his food requires some precaution; for the first eight days, the colt should have nothing but straw, and it is proper to administer some vermifuge drinks, as worms may have been generated from indigestion and green food.

"Great attention must be paid in weaning young colts, to put them into a proper stable, not too hot, for fear of making them too delicate and sensible to the impressions of the air. They should frequently have fresh litter, and be kept very clean, by rubbing them down with a wisp of straw. But they should not be tied up and curried till they are two years and a half or three years old; this currying gives them great pain, their skin being as yet too delicate to bear it, and they would fall away instead of growing fat from it; care must also be taken that the rack and manger are not too high, the necessity of raising their heads too high in order to reach their food may possibly produce a habit of carrying it in this fashion, which would give them an awkward appearance.

"At the age of three years, or three years and a half, the rider should begin to break them and make them tractable; they should at first have a light, easy saddle, and ought to wear it two or three hours every day; and they should be accustomed to have a snaffle bit in their mouths, and to lift up their feet, on which they should sometimes receive rather smart strokes, and if designed for coach or draught Horses, should wear harness and a bridle. At first a curb should not be used, they should be held by a caveson, or leather strap, and be made to trot, on even ground, without a rider, and with only the saddle or harness on the body; and when the saddle Horse turns easily, and willingly follows the person who holds the leather strap, the rough rider should mount him and dismount again in the same place, without making him move, till he is four years old, because before that age, the weight of a man overloads him, but at four years he should be made to walk or trot, a little way at a time, with the rider on his back. When a coach Horse is accustomed to the harness, he should be paired with a Horse that is thoroughly broken, putting on him a bridle, with a strap passed through it, till he begins to be used to the draught; after this the coachman must teach him to back, having the assistance of a man before, who must push him gently back, and even give him some blows to make him do it: all this should be done before young Horses have changed their food, for when once they are what is called corn-fed, that is, when they feed on grain and hay, as they are more vigorous, it is remarked also that they are less tractable, and more difficult to break.

"The bit and the spur are two means made use of to bring them into order. The mouth does not appear formed by nature to receive any other impressions than that of taste and appetite; there is, however, so great a sensibility in the mouth of a Horse, that, in preference to the eyes and ears, we address ourselves to it, to make him understand our pleasure; the smallest motion or pressure of the bit is sufficient to inform and determine the animal; and this organ of sense has no other fault than its perfection. Its too great sensibility must be managed, for if it is abused, the mouth of the Horse is spoiled, and rendered insensible to the impression of the bit; the senses of sight and hearing are not subject to such a change, and could not be dulled in this manner; but it has been found convenient to govern Horses by these organs, and it is generally true, that signs given by the sense of feeling have more effect on animals in general than those conveyed to the eyes or ears; besides, the situation of Horses with relation to those who mount or conduct them, makes their eyes almost useless for this purpose, because they see only straight forwards, so that they could only perceive the signs made to them when they turned their heads round; and although they are frequently conducted and animated by the ear, yet in fact, if they are well broken, the smallest pressure of the thighs, or most trifling motion of the bit, is sufficient to direct them; the spur is even useless, or at least it is only made use of to force them to violent motions; and as, through the folly of the rider, it often happens that in giving the spur he checks the bridle, the Horse, finding himself excited on one side, and kept in on the other, only prances and capers, without stirring out of his place.

"By means of the bridle we teach Horses to hold up their heads, and place them in a proper manner, and the smallest sign or movement of the rider is sufficient to make the Horse show all his different paces; the most natural is perhaps the trot, but ambling and galloping are more pleasant for the rider, and these are the two paces we particularly endeavour to improve."

[*To be continued.*]

TO THE EDITORS OF THE CABINET OF NATURAL HISTORY.

GENTLEMEN:—At your request I send you for publication, the calendar of nature which accompanies this. It was kept at a time when I had but little acquaintance with

Natural History, and when I had but little intercourse with the scientific world. It was made for my own amusement, and was never intended for the public eye. As you think it contains some curious facts, and that it is calculated to elicit a spirit of observation in the youthful naturalist, I have consented to its publication in the original form, little or no alteration being made in the manuscript.

Yours truly,

J. G.

Philada. Dec. 1*st*, 1831.

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NOTES OF A NATURALIST.

By Jacob Green, M. D.

A correct tabular view, in which is recorded the leafing and flowering of plants, the arrival and incubation of birds, and several other common occurrences of nature, as they successively arise, cannot fail to be a source of rational entertainment. Several attempts of this sort have been made by naturalists, both in ancient and modern times. In the works of Aristotle and Theophrastus, something of this kind may be found. Pliny, in his Natural History, remarks, (liber 16. 25,) "With the first soft breeze the *cornelian cherry* puts forth its bud, next the *bay*, a little before the equinox. The *lime*, the *maple*, the *poplar*, the *elm*, the *sallow*, the *elder*, the *filbert*, and the *hazel*, are among the first that put out leaves; the *plum tree* also is very early." Thus we see from this attentive observer, of other times, that trees were governed by certain fixed laws, with regard to their time of leafing, and that when one species of tree was seen to be in foliage, the next in succession could be easily predicted.

Calendars of a similar sort may be found in White's highly interesting History of Selborne, in England, and in several periodical works published in the United States. In recording the numerous facts as they arise, I shall indulge in any zoological or other remarks, which may occur. Since my notes were completed, I find that Dr. Bigelow of Boston, has issued a circular, in which he requests the naturalists of the United States to keep such a record during the spring of 1817, in order that contemporaneous observations of the same facts, in different places, may afford materials for a general American Calendar of Flora.

Naturalist's Calendar, kept at Princeton, N. J., in 1817, *by* Jacob Green, *M. D. Professor of Chemistry, Experimental Philosophy, and Natural History, in Nassau Hall.*

January. The deep snow which has covered the ground for some days, obliges the common *Crow*, (corvus corone,) to leave their usual haunts. They flock around stacks of grain, and visit our barn-yards in search of food.

Larks, (alauda magna?) are now easily shot. They frequent fields where the weeds are so tall as not to be covered with snow, and hover around their tops, for the seed; they are exceedingly fat. A *Golden-eyed Duck*, (anas clangula,) was noticed in the water, in company with a flock of tame ducks; it was killed, and a pike, (esox,) about four inches long, was found in its throat.

March 9th. Lamium amplexicaule, in bloom. The bright red flowers of this little plant, are in beautiful contrast with the snow which is still in many places on the ground.

10*th.* The trees exhibit but few marks of vegetation. The *Lombardy Poplar*, (populus dilatata?) on being cut down, exuded no sap.

15*th.* The *Smelt*, or snow-fish, (salmo eparlanus) taken in the Raritan river, near New-Brunswick.

18*th.* This morning I heard for the first time the plaintive note of the *Blue Bird*, (silvia sialis.)

19*th.* A more violent snow-storm than any during the last winter.

21*st.* The *Yellow Bird*, (fringilla tristis,) seen. Blue birds numerous.

24*th. Robins* in the orchards. Many of these birds pass the whole winter in the bushy marshes of this neighbourhood, where the water rarely freezes.

25*th.* Heard the *Killdeer* (charadrius vociferus.)

30*th.* Frogs begin to croak (rana zebra?) In the shallow streams salamanders are numerous (sal. rubriventris, var.)

April 1. I noticed this morning the brownish butterfly, called *Papilio Antiopa*, skimming along the wet places, near the road-side. The snow was still visible in many places in the woods, and on the hills. Pliny remarks, that the appearance of the butterfly is supposed by many the surest indication of returning spring, because the animal is too delicate to support severe changes in the weather. The Papilio Antiopa, is thought by many to exceed most of the papilios in beauty, but as it appears earlier in the season than any other butterfly, it is probably owing to this circumstance that it is so much admired. Its glossy brown wings, edged with white, and spotted with blue, are certainly pretty. Our good and great ornithologist, Wilson, alludes to it in the following line,

"When first the lone butterfly flits on the wing."

2*d. Common flies*, (musca domestica,) seen in great numbers. Earth worms perforate the surface of the soil.

3*d.* Cabbage seed, and early peas sown.

4*th.* Potatoes, beets, and onions planted.

5*th. Shepherd's Pouch*, (thlaspi,) in flowers, and the

catkins of the *Aspen*, (populus tremula,) made their appearance.

6*th*. The *Gooseberry*, (ribes,) and the *Willow*, (salix babylonica,) in leaf.

8*th*. *Spiders* shoot their webs. Is this ever done, when the animal moves about in the warm days of winter?

9*th*. *Anemone Hepatica* blooms in the woods. In the gardens, the *Blue Violet*, and the *Daffodil*, or Narsisus, are in flower. The violet,—the vernal crocus,—the snowdrop, and many other plants, which flower in the beginning of spring, cannot by any pains or care, be made to blossom in the autumn, or after the summer solstice. It is remarkable, that these plants, which are so very patient of the cold of spring, should in the autumn be so tender as not to endure the first hard frost. There are, however, many exceptions to this rule. The willow tree, or salix babylonica, is one of the first trees clothed in verdure, and is also one of the last that the frost of autumn strips of its leaves. It is said that thistles, and some other plants, in Sweden, which flower about the time of the summer solstice, never blossom before or after, and that husbandmen judge from this circumstance, as from a calendar which cannot deceive them, whether the solstice be past. (See Stillingfleet's Miscellaneous Tracts, page 140.)

10*th*. The *Skunk Cabbage*, (dracontium fætidum,) in flower, in moist situations.

11*th*. A beautiful species of dytiscus, called here the *Water Witch*, plays on the surface of the small streams. Most of these insects were in pairs.

12*th*. *Ants* open their holes. The *Martin*, (hirundo purpurea,) appeared. The garden *Hyacinth*, (hyacinthus orientalis,) in flower. In the woods, I saw the *Blood Root*, or Sanguinaria Canadensis, in bloom.

14*th*. *Bees* begin to collect honey. They always come from their hives in the warm days of winter. Pliny says they do not leave them till the 11th of May, and seems to blame Aristotle for saying they came out in March or the beginning of spring.

Moles, (sorex cristatus,) throw up hillocks; this is, I believe, performed much earlier, though I have not seen any indications of it.

The *Willow*, (salix babylonica,) in blossom. I saw for the first time a pair of *Chipping Birds*, (fringilla socialis,) or American sparrows. I heard their notes, however, a considerable time ago. The name *Chipping* is from the note they have when hopping on the ground, or among the branches; their love song is very different.

15*th*. Reddish orange *Butterfly*, (papilio viola,) whose wings are spotted with black, and expand about an inch and a half, appeared flying about a cluster of full blown daffodils.

The young *Grasshopper*, (gryllus,) without wings, is jumping about on the grass. In this state, it secretes a remarkable quantity of a brownish fluid from its mouth.

A small dipterous insect, resembling what is called the *May-fly*, and a small kind of scarabœus, appeared.

Crickets open their holes in the fields, and play around them. The common *Mud Wasp* was seen. In one of the warm days in February last, I saw one of these insects crawling torpidly in the sun. I placed it under a tumbler, near my fire-place, and fed it on honey. It became active and vigorous; but died in about two weeks after its capture. A friend has related a curious instance respecting this species of wasp. One summer afternoon a wasp flew into the room where he was sitting, and upon watching its motions he observed it fly to a number of small spider's nests, and shake them with his feet, as if he were entangled by them. He was at a loss to understand this manœuvre, till the wasp at last flew to a web, which he commenced shaking as he did the others; a spider then darted from his hiding place, no doubt expecting to seize some unfortunate insect, which he supposed was fastened in his snare; but the wasp grappled him as soon as he came within reach, and bore him off in triumph.

I saw large numbers of the *Humble Bee* lying dead on the ground, which appear to have been thrown out of their holes, which are bored in the rails of the fences. I thought them torpid, and endeavoured to revive them; they were both male and female. I suppose they must have been killed by the severity of the last winter. I also saw them flying.

16*th*. *Ants* deposit their eggs under stones.

Strawberries, (fragraria elatior et virginiana,) in flower. (Ulmus Americana) *Elm Tree*, in flower. The *Peach Tree*, (amigdalus?) in blossom. *Asparagus*, (medeola,) proper for cutting for the table.

17*th*. *Gooseberries* in flower.

21*st*. *Anemone Thalictroides* in bloom. *Currants*, (ribes) begin to form. *Cherry tree*, (prunus) in full blossom. *Cabbage plants* set out.

24*th*. *Ranunculus Abortivus* flowers.

26*th*. The *Dandelion*, (leontodon taraxacum,) flowers. Dr. Barton, in the third volume of the American Philosophical Transactions, says, this plant is not indigenous; it is certainly found in places remote from any habitation. *Blue Violet* in the woods, (viola cuculata,) flowers.

28*th*. Saxifragia virginia, nivalis and vernalis, in flowers, in the woods, and road-sides. I transplanted the saxifragia vernalis to a little box in my chamber, where it flourishes very well. The flowers, which are situated on the top of a scapus, follow the course of the sun, like the Helanthus. This plant was in bloom a week since.

Gnaphalium Plantagenium flowers, and also a species of Myosotis.

30*th.* *Young chickens* leave the egg.

The *Swallow,* (hirundo Americana,) in numbers, and also the *Goldfinch.* Both of these birds, I suppose, appear much earlier, but my situation prevented me from seeing them before.

May 4*th.* The small *Yellow Butterfly,* (papilio hecube?) which expands its wings about an inch and a quarter, and which is seen during the summer months playing about wet, muddy spots along the road-side, was seen. The small moscheto seen.

5*th.* Viola Pubescens Acton, or *Pennsylvanica Mich.* in flower.

6*th.* *Young Ducks* hatched.

10*th.* *Wrens* build their nests, (silvia domestica.) *Night Hawk,* (caprimulgus Americanus,) appears. *Chimney Swallows,* (hirundo pelasgia,) build their nests.

11*th.* The white nocturnal *Moths,* called Millers, which expand their wings about one quarter of an inch, appeared.

14*th.* The *Blue Bird* builds its nest. The female only, as far as I observed, was employed. The male bird guarded the box, and sang to her during her work. They did not sleep in their new habitation, the two first nights it was in their possession, for on the third day, after much labour, they apparently abandoned it.

15*th.* The *Cat Bird,* (T. Lividus,) appears. This bird rarely uses the note from whence it has its name, on its first coming, but two or three other notes of the softest melody.

The *Blue Flag,* (iris,) the *Snowball Tree,* (vibernum,) and the *Peony,* (pæonia,) in flower.

16*th.* The *Chewenk,* or *Towhe Bunting,* (emberiza, erythrophthalma,) is on the trees; it has a charming song.

I observed a large number of *Ants* resorted to, and covered the *buds* of the Peony, probably for food; but when the *flower* is fully *blown,* they forsake it.

Vaccinium Corymbosum, Geranium Maculatum, and Podophyllum Peltatum, or *May Apple,* in flowers.

Ring Dove, coos. *Grey Owls,* hoot. *Goldfinches* pair. Quere, how long does this take place, before the business of nidification is commenced?

17*th.* The orange-brown Moth, or Butterfly, which expands its wings about an inch, which are covered with black spots, appeared.

Caltha Palustus, in blossom.

Azalea Viscosa, a variety of this plant blossoms.

Rhaphanus Rhaphanistrus, or wild radish, flowers.

Early Peas flower, being forty-six days after they were planted.

18*th.* The *May Rose* blooms.

The *Blue Birds* have returned to their box. I suspect they never intended to leave it entirely; but that they always absent themselves some hours after their nest is completed; though I observed, that nothing but straw and small sticks were used, which could not require drying. The male and female always come together, though the male now frequently leaves the other in the box, flying off to some neighbouring tree. This he never did, while the nest was constructing; then he always called to her while she was at work, and she answered him with a short, plaintive note, which now she seems to have forgotten. To-day, I think, she has deposited her first egg. They visit the box but rarely in the course of the day, but at least once early in the morning, and again as the sun is setting; though I suspect they are all the day on the surrounding trees.

20*th.* The *Mocking Bird,* (T. Polyglottus,) sings. This evening, just as the sun had gone down, this charming warbler made the woods to echo with his various notes. I listened to him about a quarter of an hour, and then left him singing.

May 21*st.* The *seventeen year Locust,* (cicada septemdecima,) appears. It rises from the ground a kind of apterous beetle. After leaving the shell of its chrysalis state, it is about twenty-four hours before it has sufficient strength to fly, and then about five days before it sings.

23*d.* *Strawberries* ripe.

24*th.* Saw the *Toad,* (bufo musicus,) for the first time.

The large *Butterfly,* (bombyx luna,) the handsomest species of this insect in this part of the country, breaks its winter case. A branch which supported this insect and its cocoon, was broken from an apple tree last fall, and suspended in the kitchen.

Oyster Plant, (tragopodon,) flowers; the calyx of the plant closes over the petals just before sundown; it never fully expands but in the sunshine.

27*th.* *Mock Orange,* (Philadelphus odorus,) flowers.

Blue Birds hatch their first broods.

31*st.* *May Weed,* (anthemis cotula,) flowers. The full white blossom of this weed may be seen in uncultivated fields, and along the road sides, till the end of autumn.

June 3*d.* The *Locusts,* which have been kept in the ground, by reason of the cold and rainy weather. (Thermometer, between 40° and 50°, the whole time) now appear in vast numbers.

5*th.* The *Robin,* (turdus migratorius,) *sits.* *Blackberry,* (rubus occidentalis,) blossoms. The *Mallow,* (malva,) flowers.

The pea-green *Caterpillar,* which appears about this time, presented me with a curious fact. I fastened one of

them to a board, with a pin, which passed through the middle of the body, and in that situation the animal assumed the chrysaline state,—the chrysalis was alive three or four days afterwards. The caterpillar was about an inch and a half long, and was marked with black bands and spots.

17*th*. The *Rose Bug*, (melolontha multivora,) appears. Large numbers of these insects fill the air. A white substance seems to be a favourite article to rest upon, such as bleached linen. They emit from them a juice similar to that of the grasshopper, but somewhat darker. Apterous animalculæ, appear in rain water. When viewed through the solar miscroscope, the fore-part appeared truncated, and a little bristly; near the tail, there projected two or more plume-like hairs; in swimming it seemed to move only at the extremities, the middle part remaining still. This animal darted so swiftly through the water, whenever it was brought to the focus of the miscroscope, (owing, no doubt, to the heat of the concentrated rays,) that I could not accurately distinguish its component parts. To the naked eye, the animal has somewhat the shape of a tadpole, the tail of which seemed forked.

[*To be continued.*]

PASSAGE ACROSS THE GREAT CORDILLERA.

I was steadily riding my mule at the rate of five miles an hour, in order to measure, by my watch, the breadth of the plains of Uspallata, when we met an old Gaucho huntsman, with two lads, and a number of dogs, which at once put a stop to my calculation. He had several loose horses, over one of which was hanging the carcass of a guanaco.

He had been hunting for lions, and had been among the mountains for two days, but had had little sport. The Gaucho was a fine picture of an old sportsman. Round his body were the "bolas" (balls,) which were covered with clotted blood. His knees were admirably protected from the bushes, by a hide, which was under his saddle, and which in front had the appearance of gambadoes.

He was mounted on a good horse; his lasso, in coils, hung at his saddle. As soon as we stopped, he was surrounded by his dogs, which were a very odd pack. Some of them were very large, and some quite small, and they seemed to be all of different breeds; many had been lamed by the lions and tigers, and several bore honourable scars. I regretted very much indeed that I had not time to follow the sport, which must have been highly interesting.

As soon as the dogs unkennel a lion or a tiger, they pursue him until he stops to defend himself. If the dogs fly upon him, the Gaucho jumps off his horse, and while the animal is contending with his enemies, he strikes him on the head with the balls, to which an extraordinary momentum can be given. If the dogs are at bay, and afraid to attack their foe, the Gaucho then hurls the lasso over him, and galloping away, he drags him along the ground, while the hounds rush upon him, and tear him.

The mountains now seemed to be really over our heads, and we expected that we should have immediately to climb them, but for many hours we went over a plain as dry and barren as the country already described on the other side of Uspallata, and which wound its course among the mountains. At last we crossed a rapid torrent of water, and then immediately afterwards came to another, which takes its rise at the summit of the Andes, and whose course, and comparatively gradual descent, directs the passage; and it is on this spot the traveller may proudly feel that he is at last buried among the mountains of the Andes. The surface of the rocks which surrounded us, afforded no pasture, and the gnarled wood and the stunted growth of the trees, announced the severity of the climate in winter; yet the forms of the mountains, and the wild groups in which they stood towering one above another, can only be viewed with astonishment and admiration.

Although the sun was retiring, and the mules very tired, we wished to have gone on half an hour longer, but the peon assured us we should not find so good a place, and, pointing to some withered herbage, and some large loose stones, he earnestly advised me to stop, saying, "Hai aqui pasto bueno para las mulas, y para su merced buen alojamiento, hai agua, aqui hai todo," (here is pasture for the mules, and for your excellency good lodging, water, and everything.) We therefore dismounted near a spring, and having collected wood, and the miners having cooked our supper, we lay down on the ground to sleep. The air was cool and refreshing, and the scene really magnificent.

As I lay on the ground upon my back, the objects around me gradually became obscure, while the sun, which had long ago set to us, still gilded the summits of the highest mountains, and gave a sparkling brightness to the snow, which faded with the light of day. The scene underwent a thousand beautiful changes; but when it was all lost in utter darkness, save the bold outline which rested against the sky, it appeared more beautiful than ever.

The peon, who was always very active, was up long before day-break, and we were awakened by the bell-mule, and the others which were now collected. We got up in the dark, and as our party were preparing to start, the group, though indistinctly seen by the blaze of the

fire, was a very odd one. The three miners were eating their breakfasts seated on loose stones round a large fragment of rock, which served as a table. Their elbows were squared, and they were eagerly bending over the food before them. The peons, with their dark brown faces, and different coloured caps, handkerchiefs, and ponchos, were loading the "carga" mules. Some of the party were putting on their spurs; others were arranging their toilette. The light was now faintly dawning on the tops of the highest mountains, and the snow was just discovered lying in large patches and ridges. The bottoms of the ravines were in dark shade, and white windy clouds were flying across the deep blue sky—for some moments all was silent: however, as soon as the mules were ready we mounted, and we were off before we could distinctly see; but the mules picked their way, and continually ascending by a path covered with great stones, and impracticable to any animal except a mule, we continued to follow the course of the great stream, which was a torrent, roaring and raging, and altogether impassable.

The sufferings of the poor mules now attracted our attention; they had travelled from Mendoza with but little rest, and little food; still they required no driving, but were evidently making every possible exertion to keep up with the mule which carried the bell. Occasionally the "carga" would require adjusting, and the peon, throwing his poncho over the creature's eyes, would alter it, while the rest continued their course, but the poncho was no sooner removed, than the mule, trotting and braying, joined the troop, never stopping till he came to the bell.

On the road, the number of dead mules, which indeed strew the path from Mendoza to Santiago, seemed to increase, and it was painful to see the living ones winding their path among the bones and carcasses of those who had died of fatigue. By the peculiar effect of the climate, most of these poor creatures were completely dry, and as they lay on the road with their hind legs extended, and their heads stretched towards their goal, it was evident, from their attitudes, that they had all died of the same complaint—the hill had killed them all.

After passing one or two very rapid torrents, we came to a mountain, which was one precipitous slope from the top to the torrent beneath. About half way up, we saw a troop of forty guanacos, who were all gazing at us with great attention. They were on a path, or track, parallel to the water, and as the side of the mountain was covered with loose stones, we were afraid they would roll some of them down upon us.

On the opposite side of the water, was one of the most singular geological formations which we had witnessed. At the head of a ravine was an enormous perpendicular mountain of porphyry, broken into battlements and turrets, which gave it exactly the appearance of an old castle, on a scale, however, altogether the subject of a romance. The broken front represented, in a most curious manner, old fashioned windows and gates, and one of the Cornish miners declared "he could see an old woman coming across a drawbridge."

As I was looking up at the region of snow, and as my mule was scrambling along the steep side of the rock, the capitaz overtook me, and asked me if I chose to come on, as he was going to look at the "Ladera de las Vaccas," to see if it was passable, before the mules came to it.* He accordingly trotted on, and in half an hour we arrived at the spot. It is the worst pass in the Cordillera. The mountain above appears almost perpendicular, and in one continued slope down to the rapid torrent which is raging underneath. The surface is covered with loose earth and stones which have been brought down by the water. The path goes across this slope, and is very bad for about seventy yards, being only a few inches broad; but the point of danger is a spot where the water which comes down from the top of the mountain, either washes the path away, or covers it over with loose stones. We rode over it, and it certainly was very narrow and bad. In some places the rock almost touches one shoulder, while the precipice is immediately under the opposite foot, and high above the head are a number of large loose stones, which appear as if the slightest touch would send them rolling into the torrent beneath, which is foaming and rushing with great violence. However, the danger to the rider is only imaginary, for the mules are so careful, and seem so well aware of their situation, that there is no chance of their making a false step. As soon as we had crossed the pass, which is only seventy yards long, the capataz told me that it was a very bad place for baggage-mules, that four hundred had been lost there, and that we should also very probably lose one; he said, that he would get down to the water at a place about a hundred yards off, and wait there with his lasso to catch any mule that might fall into the torrent, and he requested me to lead on his mule. However, I was resolved to see the tumble, if there was to be one, so the capataz took away my mule and his own, and while I stood on a projecting rock at the end of the pass, he scrambled down on foot, till he at last got to the level of the water.

The drove of mules now came in sight, one following another; a few were carrying no burdens, but the rest

* When first, from the melting of the snow, the Cordillera is "open," this passage is always impassable; but it becomes broader towards the end of summer.

were either mounted or heavily laden, and as they wound along the crooked path, the difference of colour in the animals, the different colours and shapes of the baggage they were carrying, with the picturesque dress of the peons, who were vociferating the wild song by which they drive on the mules, and the sight of the dangerous path they had to cross,—formed altogether a very interesting scene.

As soon as the leading mule came to the commencement of the pass, he stopped, evidently unwilling to proceed, and of course all the rest stopped also.

He was the finest mule we had, and on that account had twice as much to carry as any of the others; his load had never been relieved, and it consisted of four portmanteaus, two of which belonged to me, and which contained not only a very heavy bag of dollars, but also papers which were of such consequence that I could hardly have continued my journey without them. The peons now redoubled their cries, and leaning over the sides of their mules, and picking up stones, threw them at the leading mule, who now commenced his journey over the path. With his nose to the ground, literally smelling his way, he walked gently on, often changing the position of his feet, if he found the ground would not bear, until he came to the bad part of the pass, where he again stopped, and I then certainly began to look with great anxiety at my portmanteaus; but the peons again threw stones at him, and he continued his path, and reached me in safety; several others followed. At last a young mule, carrying a portmanteau, with two large sacks of provisions, and many other things, in passing the bad point, struck his load against the rock, which knocked his two hind legs over the precipice, and the loose stones immediately began to roll away from under them: however his fore-legs were still upon the narrow path; he had no room to put his head there, but he placed his nose on the path on his left, and appeared to hold on by his mouth: his perilous fate was soon decided by a loose mule who came, and in walking along after him, knocked his comrade's nose off the path, destroyed his balance, and head over heels the poor creature instantly commenced a fall which was really quite terrific. With all his baggage firmly lashed to him, he rolled down the steep slope, until he came to the part which was perpendicular, and then he seemed to bound off, and turning round in the air, fell into the deep torrent on his back, and upon his baggage, and instantly disappeared. I thought, of course, that he was killed; but up he rose, looking wild and scared, and immediately endeavoured to stem the torrent which was foaming about him. It was a noble effort; and for a moment he seemed to succeed, but the eddy suddenly caught the great load which was upon his back, and turned him completely over; down went his head with all the baggage, and as he was carried down the stream, all I saw were his hind quarters, and his long, thin, wet tail, lashing the water. As suddenly, however, up his head came again; but he was now weak, and went down the stream, turned round and round by the eddy, until, passing the corner of the rock, I lost sight of him. I saw, however, the peons, with their lassos in their hands, run down the side of the torrent for some little distance; but they soon stopped, and after looking towards the poor mule for some seconds, their earnest attitude gradually relaxed, and when they walked towards me, I concluded that all was over. I walked up to the peons, and was just going to speak to them, when I saw at a distance a solitary mule walking towards us!

We instantly perceived that he was the Phaeton whose fall we had just witnessed, and in a few moments he came up to us to join his comrades. He was of course dripping wet; his eye looked dull, and his whole countenance was dejected: however, none of his bones were broken, he was very little cut, and the bulletin of his health was altogether incredible.

With that surprising anxiety which the mules all have to join the troop, or rather the leading mule which carries the bell, he continued his course, and actually walked over the pass without compulsion, although certainly with great caution.

We then continued our course for two hours, until we came to the "Rio de las Vaccas," which is the most dangerous torrent of any of those which are to be crossed. We got through it with safety, but it was very deep, and so excessively rapid, that large stones were rolled down it with the force of the water. The mules are accustomed to these torrents, but they are, notwithstanding, much frightened at them, and it is only long spurs that can force them into them.

While we were crossing, the peons stood down the stream, with their lassos hurling round their heads, in order to catch anything which might have been carried away; but as the boxes which I had seen washed from the mules were dashed to pieces before they had got twenty yards, the peon's lasso came a little too late; and besides this, as the mule is their own property, I used sometimes to think that, in the hurry and indecision of the moment, they would probably catch him instead of the rider.

When a large party cross this river, and when it is deep, it is really amusing, after one has got across it, to observe the sudden change of countenance of one's friends as *they* ride through it; sometimes perched up on the top of a fragment of rock barely covered, and expecting the next step to be their last; and sometimes scrambling out of

GREAT HORNED OWL.

a hole, with uplifted eye-brows, open mouth, and an earnest expression of uneasiness and apprehension—and these are really situations into which the traveller in the Andes is often thrown, though they disconcert the gravity and solemnity of his "Personal Narrative."—*Head's Journeys across the Pampas.*

GREAT HORNED-OWL.

STRIX VIRGINIANA.

[Plate II. Vol. 2.]

Arct. Zool. p. 228, *No.* 114.—Edw. 60.—Lath. i, 119. Turt. *Syst. p.* 166.—*Hibou des Terres Magellaniques*, Buff.—*Pl. Enl.* 385.—*Bubo Virginianus*, Briss. i, *p.* 484.—*Strix Virginiana, Ind. Orn. p.* 52.—Gmel. *Syst.* i, *p.* 287.—*Virginian Eared Owl*, Lath. *Gen. Syn. Supl.* vi, *p.* 40.—J. Doughty's *Collection.*

"This noted and formidable Owl," says Wilson, "is found in almost every quarter of the United States. His favourite residence, however, is in the dark solitudes of deep swamps, covered with a growth of gigantic timber; and here, as soon as evening draws on, and mankind retire to rest, he sends forth such sounds, as seem scarcely to belong to this world, startling the solitary pilgrim as he slumbers by his forest fire,

'Making night hideous.'

Along the mountainous shores of the Ohio, and amidst the deep forests of Indiana, alone, and reposing in the woods, this ghostly watchman frequently warned me of the approach of morning, and amused me with his singular exclamations; sometimes sweeping down and around my fire, uttering a loud and sudden *Waugh O! Waugh O!* sufficient to have alarmed a whole garrison. He has other nocturnal solos, no less melodious, one of which very strikingly resembles the half-suppressed screams of a person suffocating, or throttled, and cannot fail of being exceedingly entertaining to a lonely benighted traveller, in the midst of an Indian wilderness.

"This species inhabits the country round Hudson's Bay; and, according to Pennant, who considers it a mere variety of the Eagle Owl, (*Strix bubo*) of Europe, is found in Kamtschatka; extends even to the arctic regions, where it is often found white; and occurs as low as Astrakan. It has also been seen white in the United States; but this has doubtless been owing to disease or natural defect, and not to climate. It preys on young rabbits, squirrels, rats, mice, partridges, and small birds of various kinds. It has been often known to prowl about the farm-house, and carry off chickens from the roost. A very large one, wing-broken while on a foraging excursion of this kind, was kept about a house for several days, and at length disappeared, no one knew how. Almost every day after this, hens and chickens also disappeared, one by one, in an unaccountable manner, till in eight or ten days very few were left remaining. The fox, the minx and weasel, were alternately the reputed authors of this mischief, until one morning, an old lady, rising before day to bake, in passing towards the oven, surprised her late prisoner the Owl, regaling himself on the body of a newly killed hen. The thief instantly made for his hole under the house, whence the enraged matron soon dislodged him with the brush-handle, and without mercy despatched him. In this snug retreat were found the greater part of the feathers, and many large fragments, of her whole family of chickens.

"There is something in the character of the Owl so recluse, solitary and mysterious, something so discordant in the tones of its voice, heard only amid the silence and gloom of night, and in the most lonely and sequestered situations, as to have strongly impressed the minds of mankind in general with sensations of awe, and abhorrence of the whole tribe. The poets have indulged freely in this general prejudice; and in their descriptions and delineations of midnight storms, and gloomy scenes of nature, the Owl is generally introduced to heighten the horror of the picture. Ignorance and superstition, in all ages, and in all countries, listen to the voice of the Owl, and even contemplate its physiognomy with feelings of disgust, and a kind of fearful awe. The priests, or conjurers, among some of our Indian nations, have taken advantage of the reverential horror for this bird, and have adopted the *Great Horned-Owl*, the subject of the present account, as the symbol or emblem of their office. 'Among the Creeks,' says Mr. Bartram, 'the junior priests, or students, constantly wear a white mantle, and have a Great Owl skin cased and stuffed very ingeniously, so well executed as almost to appear like the living bird, having large sparkling glass beads, or buttons, fixed in the head for eyes. This insignia of wisdom and divination they wear sometimes as a crest on the top of the head; at other times the image sits on the arm, or is borne on the hand. These bachelors are also distinguished from the other people by their taciturnity, grave and solemn countenance, dignified step, and singing to themselves songs or hymns in a low, sweet voice, as they stroll about the town.'

"Nothing is a more effectual cure for superstition than a knowledge of the general laws and productions of nature; nor more forcibly leads our reflections to the first, great

self-existent CAUSE of all, to whom our reverential awe is then humbly devoted, and not to any of his dependent creatures. With all the gloomy habits, and ungracious tones, of the Owl, there is nothing in this bird supernatural or mysterious, or more than that of a simple bird of prey, formed for feeding by night, like many other animals, and of reposing by day. The harshness of its voice, occasioned by the width and capacity of its throat, may be intended by heaven as an alarm and warning to the birds and animals on which it preys, to secure themselves from danger. The voices of all carnivorous birds and animals are also observed to be harsh and hideous, probably for this very purpose.

"The Great Horned-Owl is not migratory, but remains with us the whole year. During the day he slumbers in the thick evergreens of deep swamps, or seeks shelter in large hollow trees. He is very rarely seen abroad by day, and never but when disturbed.* In the month of May they usually begin to build. The nest is generally placed in the fork of a tall tree, and is constructed of sticks, piled in considerable quantities, lined with dry leaves, and a few feathers. Sometimes they choose a hollow tree, and in that case carry in but few materials. The female lays four eggs, nearly as large as those of a hen, almost globular, and of a pure white. In one of these nests, after the young had flown, were found the heads and bones of two chickens, the legs and head of the Golden-winged Woodpecker, and part of the wings and feathers of several other birds. It is generally conjectured that they hatch but once in the season.

"The length of the male of this species is twenty inches; the bill is large, black and strong, covered at the base with a cere; the eyes golden yellow; the horns are three inches in length, and very broad, consisting of twelve or fourteen feathers, their webs black, broadly edged with bright tawny; face rusty, bounded on each side by a band of black; space between the eyes and bill whitish; whole lower parts elegantly marked with numerous transverse bars of dusky, on a bright tawny ground, thinly interspersed with white; vent pale yellow ochre, barred with narrow lines of brown; legs and feet large and covered with feathers, or hairy down, of a pale brown colour; claws very large, blue black; tail rounded, extending about an inch beyond the tips of the wings, crossed with six or seven narrow bars of brown, and variegated or marbled with brown and tawny; whole upper parts finely pencilled with dusky, on a tawny and whitish ground; chin pure white, under that a band of brown, succeeded by another narrow one of white; eyes very large.

"The female is full two feet in length, and has not the white on the throat so pure. She has also less of the bright ferruginous or tawny tint below; but is principally distinguished by her superior magnitude."

"It is during the placid serenity of a beautiful summer night," says Mr. AUDUBON, "when the current of the waters moves silently along, reflecting from its smooth surface the silver radiance of the moon, and when all else of animated nature seems sunk in repose, that the Great Horned-Owl, one of the Nimrods of the feathered tribes of our forests, may be seen sailing along silently, yet rapidly, intent on the destruction of the objects destined to form his food. The lone steersman of the descending boat observes the nocturnal hunter, gliding on extended pinions across the river, sailing over one hill and then another, or suddenly sweeping downwards, and again rising in the air like a moving shadow, now distinctly seen, and again mingling with the sombre shades of the surrounding woods, fading into obscurity. The bark has now floated to some distance, and is opposite the newly cleared patch of ground the result of a squatter's first attempt at cultivation, in a place lately shaded by the trees of the forest. The moon shines brightly on his hut, his slight fence, the newly planted orchard, and a tree, which, spared by the axe, serves as a roosting-place for the scanty stock of poultry which the new comer has procured from some liberal neighbour. Amongst them rests a Turkey-hen, covering her offspring with extended wings. The Great Owl, with eyes keen as those of any falcon, is now seen hovering above the place. He has already espied the quarry, and is sailing in wide circles, meditating his plan of attack. The Turkey-hen, which at another time might be sound asleep, is now, however, so intent on the care of her young brood, that she rises on her legs, and purs so loudly, as she opens her wings and spreads her tail, that she rouses her neighbours, the hens, together with their protector. The cacklings which they at first emit, soon become a general clamour. The squatter hears the uproar, and is on his feet in an instant, rifle in hand; the priming examined, he gently pushes open his half closed door, and peeps out cautiously, to ascertain the cause by which his repose has been disturbed. He observes the murderous Owl just alighting on the dead branch of a tall tree, when, raising his never-failing rifle, he takes aim, touches the trigger, and the next instant sees the foe falling dead to the ground. The bird is unworthy of farther attention, and is left a prey to some prowling opossum, or other carnivorous quadruped."

* One day last summer, about noon, I discovered one of these Owls feeding on a rabbit, which it had just caught, in a very retired wood in the lower part of New-Jersey; from which circumstance I supposed they frequently seize their prey in the day time.—ED.

THE VARIETY OF GAME IN NEW-JERSEY.

THERE is perhaps no spot in the United States, of the same area as the State of New-Jersey, which so abounds in the variety of game common to this country; certainly there is not, in any civilized or cultivated neighbourhood in any part of our widely extended continent, a place where the sportsman and naturalist may resort, the one for recreation, and the other for science, and so fully enjoy the objects of their pursuit as in the small, but interesting state of New-Jersey.

In the successive seasons for shooting, a great plentitude of game may be found in all parts of this state, and no sooner does the genial influence of the opening spring spread its beneficial effects, than this region is among the first to be hailed by the carols of the many warblers, which commence their northern migration; and for Ornithological research, it always has been esteemed one of the best districts on the continent. Of the variety which enters the catalogue of game in this country, the following may be found in the state of New-Jersey.

Snipe. In March, and until their final migration to the north in May, all the low lands abound with these birds, but especially the meadows along the water courses. They are occasionally found through the summer, but return again in numbers from the north in September and October, and remain a short period previous to their flight for winter quarters in the south.

Woodcock. It is well known to most of the sportsmen in the cities of New-York and Philadelphia, that Woodcock abound throughout every part of this state. The soil appears peculiarly adapted to the habits of these birds; being soft, and free from stones and other hard substances, is every way suited for their long and flexible bills to penetrate in search of food free from obstruction. It is the favourite place of resort for sportsmen when in search of Woodcock, in preference to any other ground, as their success is generally twofold more here than in other places. On the low lands west of New-York, and those meadows in the interior of the state, known generally by the name of "Atsion Meadows," as well as those extensive low lands which bound the Delaware, commencing a few miles below Philadelphia, and running south for twenty or thirty miles, are places in which multitudes of these birds are destroyed, during the regular seasons for sporting. I have heard of a party of two or three gentlemen, on some spot in the former place, having killed, in one day, upwards of eighty Woodcock; and but recently, I was informed by a gentleman, who formed one of a party on a fourth of July excursion, that on a very small spot of a few acres, in Salem county, as many as one hundred and fifty had been killed during that day, and numbers more on the same spot the day succeeding. Certain it is, that an excursion to any good spot of ground in this state, is seldom unsuccessful.

The Quail, or Partridge. This state appears to be the settled home for this most interesting of all birds. Of the great variety of birds which every where abounds throughout New-Jersey, none appears so much attached to its soil, as this innocent bird. Other birds, as the seasons change, depart for distant climes; but the Partridge is ever to be found in this region; and when not persecuted by sportsmen, it becomes so accustomed to the sight of men, as to make it half domesticated. Whatever scarcity prevails generally in other districts, this well-known bird may always be found here. Perched on a stump, or on the fence, beneath the shade of an apple tree, at the close of a sultry summer's day, the male bird sends forth those clear, expressive, and familiar words, "*Bob White,*" which awaken so many pleasing recollections of the past, and enlivening anticipations of the future, that it is ever a welcome visitor. These notes, too, proclaim that "Seed time and harvest have come"—for they occur only during those months. The many uncultivated parts; the extensive tracts of bush land, and the numerous swamps, all afford so much protection to the Partridge from the many enemies which beset them on every side. Indeed it appears constituted by nature as a place of repose where their kind may most freely propagate.

The Ruffed Grouse, or Pheasant. Among the pines and laurel hills, may be found sometimes in numbers, the Pheasant. How often in his solitary rambles through the wood, when the mind is intensely fixed on other objects, is the passenger startled with a loud, whirring noise, like distant thunder, which makes his flesh fairly crawl!—it is this shy and most difficult of all birds to shoot, fleeing the face of man as its great adversary. I have, in September and October, seen these birds in flocks of from six to sixteen. I well recollect, in the fall of 1824, starting, one after another, fourteen Pheasants from a large grape vine, which grew immediately opposite Philadelphia, on the edge of a thicket, well known to the sportsmen of the neighbourhood by the name of "Kaign's Swamp;" but I have seen them in greater abundance on the lofty hills of East Jersey, in my rambles after game. They are difficult birds to kill, not only from the exceeding velocity of their flight, but by their seeking the most dense and difficult thickets, and their well-known stratagem of running some distance first, and then flying off in an opposite direction from the sportsman.

Pinnated Grouse. The barrens of Gloucester, and other counties of this state, have been the most celebrated

grounds, east of the Alleghany, for this chief of our feathered game. In former years they were in great abundance on these barren grounds, which were then visited by old and scientific sportsmen, who regarded the laws of shooting, as well for example as from principle,—and multitudes fell beneath the unerring aim of many gentlemen, who themselves are now numbered with the dead. But lately, through great persecution, by those who have no claims to the principles which constitute sportsmen, and who visit these grounds months before the season for shooting commences by law, and while the birds are in an unfledged state, the Grouse are driven from this favourite abode, to seek shelter in other and more retired spots among the mountains.

Year after year has this unhallowed persecution of the Grouse been carried on, until the species has been almost exterminated from the state. Of what satisfaction can it be to a man who claims the character of a sportsman, to destroy in numbers birds so young as to be useless for the table, and possessing so little energy and power to fly, that an ordinary missile would answer the purpose to kill them as well as the gun; and that, too, so early in the season, that the heat creates putrefaction, and renders them unfit to bring home, and our *soi disant* sportsmen have no other evidence of their success, than the boasting which usually is so strong a feature in the characters of such persons? Is it not more praiseworthy to bring down, in sportsmanlike manner, *one full grown bird*, powerful on the wing, in October, than a score of young, squeaking birds, unable even to top the scrub oaks, for want of feathers and strength to support them?

Rabbits. Of the abundance of these animals, every one seems aware; and although they do not rank in our catalogue as game, yet numbers find their way to the different markets, and by many are eagerly sought as a luxury. But to a certain description of gunners they afford much amusement; and in the absence of other species of game, the sportsman may divert his leisure hours, and find recreation frequently in hunting Rabbits. It often occurs, that a party of but few persons, will, without much fatigue, kill from thirty to fifty of these animals in a single day.

Foxes. Of the variety of hunting in New-Jersey, less appears to be done after Foxes than other animals, although in great abundance in every part of the state. In East Jersey, they are yet hunted in the laudable, old-fashioned style, on horseback; but in the western part of the state, this appears, of late years, to be relinquished altogether; more, perhaps, from the difficult land to ride over, being generally covered with thickets and brushwood. And it is only towards the holydays, that here and there a few neighbours congregate for a Fox hunt, with horses, dogs, guns, &c. and altogether in a most unsportsmanlike way of hunting. The gunners, however, at Cape May, appear to have a mode adapted peculiarly to their neighbourhood, of hunting "Sly Reynard," which is chiefly on small islands, situated on the sea-side, and separated considerably from the main land. On some of these islands, the Foxes are in great abundance, for hither they resort for the variety of food which may at all times be found along the margin of the sea, such as crabs, muscles, clams, gull's eggs, young birds, &c., and, as the covering consists of high grass, weeds, and a species of bush common to these islands, and being altogether uninhabited, the Foxes propagate in numbers here, and at particular seasons afford fine sport to the inhabitants along the sea shore. The thickest cover grows on a ridge in the centre of these islands, from which, to the water's edge, and where the tide ebbs and flows, forms a clear space. Consequently, when a party is made up, to hunt the Foxes, one or two drives the centre, with dogs, while others of the party are stationed with guns, at distances from each other to the end of the island, and shoot successively as the Foxes pass them. And here the manners and cunning of the animal are often fully displayed; for frequently, when pursued by the hounds, which go by scent altogether, the Foxes, to avoid them, will run into the surf, and by keeping near the edge of the water, as the breakers roll over the sand, all the scent is effaced by the water, and the hounds are disconcerted. But few, however, with all their artfulness, escape, as the stationed gunners are ready at every point to receive them, and in this way many are killed.

Deer. Nothing is more common in the western part of New-Jersey, than deer hunting in the months of October, November and December, and it is scarcely credible, that in a country so thickly populated as is this state, and so adjacent to the city of Philadelphia, that such herds of these animals may be found; multitudes are killed every fall in the counties of Monmouth, Burlington, Cumberland and Cape May. I have been on hunting excursions, wherein ten or twelve Deer have been started in a single drive.

The manner of hunting these animals is by still shooting, or at stands. All the persons who compose the party, (except one or two, who act as drivers,) depart for distant places, designated as the stands for each hunter, and here they remain until what is termed, "the drive is out." These stands, generally, are on knolls of land in the wood, or in roads, and Deer-paths, which continually intersect the region where these hunts take place, and are generally selected by experienced hunters, as places where the Deer have repeatedly crossed during the night season. After sufficient time is allowed for the individuals of the

party to reach their respective stands, the drivers, with their hounds, commence a few miles distant, and drive directly towards some of the stands, and in this way it occurs, that as many as five or six Deer are put in motion, which being pursued by the hounds, take different directions, and in running off very frequently pass the hunters at their stands, and often fall victims to these artifices of their enemies. The gun employed generally is the double gun, charged with from twelve to twenty buckshot.

Bears. It not unfrequently happens, that Bears are killed in the lower part of this state; indeed, every season furnishes some sport of this kind to the inhabitants of the lower counties. Latterly, they have increased in such numbers in particular neighbourhoods, as to become pests to the farmers, and as beach and chesnuts are rare in that part of New-Jersey, other articles of food must necessarily supply the deficiency of this *mast* for the Bears; consequently, they make frequent inroads on the corn-fields, hogstyes, and sheep-folds, and during the present fall, numbers are suspected to be residents of Cape May county, where many hogs and sheep have already been killed by them. And but a few days since, I was informed by a gentleman, who was returning from Cape May to Philadelphia, that while crossing a large swamp a few miles from Tuckahoe, he saw two full grown Bears in the public highway.

This part of New-Jersey affords fine shelter for Bears: the interminable pines, extensive cedar swamps, and other immense thickets, are well adapted to shelter them from successful pursuit, and protect them in their torpid state, during the inclemencies of winter. Now and then, however, some of these animals, possessing more temerity than their fellows, wander too far from their seclusion, and approach so near the settlements, that they are shot. A few years since a coloured man, who resided in Cape May county, shouldered his musket, and, accompanied by his hounds, entered a large pine swamp in search of deer. He had not proceeded far, before his dogs gave tongue, as he supposed, on the track of a deer, and after following the sounds for some distance he came up to his dogs, which appeared to have something at bay. Approaching more near, he discovered, sitting very unconcernedly, midway up a fallen pine tree, (which had lodged against another tree,) a large Black Bear. After eyeing Bruin for some time, and hesitating whether to shoot it or not, or perhaps afraid to make an attack single-handed, our adventurer concluded it the safer part to return home for more assistance, which he accordingly did; but on coming back with reinforcement, he met the dogs, and found that the Bear had made off, and thereby lost a chance of successfully signalizing himself, as his musket was heavily loaded with buck-shot. Not so with old Mr. Finch and his son John. These celebrated hunters, so well known to the inhabitants of West Jersey, had been scouring some large swamps for deer, when the son entered a dense thicket, with the hope of arousing and shooting a deer; but the first animal he encountered was a Bear, which he immediately shot, and, to his surprise, up sprung a second; this he attacked with his musket; but before he could despatch it, a third came to its assistance, which proved to be the mother of both of the former. Here our hunter was in a "straight betwixt two"—but, nothing daunted, he belaboured both so manfully with his musket, and calling at the same time to his father, that he succeeded in repelling their attacks, until the old man came up, who shot the mother, and they jointly despatched the third.

Water Fowl. For the multitudes of Water Fowl, it is only necessary at this season of the year, and until spring, to visit the sea-side of New-Jersey, from Cape May to the highlands of Neversink. Here the shores teem with millions, forming almost every variety of Water Birds, of which our continent can boast, such as Snipes, Plovers, Ducks, Brant, Geese, Swans, and sometimes Pelicans, and nearly all the Heron kind. Hither resort numbers of gunners, during the season of shooting, who press to the noted points, across which, thousands of these Water Fowl pass, in their migratory movements, and the success attending such excursions, is almost incredible. The inland fresh water ponds, too, of Cape May, are visited by numbers, chiefly of the Black Duck, at which places, gunners lay in ambush, and on the approach of the Sea Fowl to feed in the ponds, open a most destructive fire among the flocks, whereby hundreds are killed. The most noted points for shooting Ducks appear to be Squan, Manahawkin, Somers' Point, and the neighbourhood of Cape May Court-House, as well as points adjacent to these.

Thus, when we survey a district so replete with animals, which invite from neighbouring cities and states multitudes of sportsmen, we cannot help admiring the wisdom of the Legislature of New-Jersey, in enacting such laws, as will not only protect their own rights from aggression, but the innocent objects of their charge from undue destruction. Game has always been the special care of many governments of the earth; and it is unnecessary to recur to the severity of the laws of Great Britain on this head, to prove the estimation in which game is there held; suffice it to say, that the punishment for their violation, is among the most severe of the penal code of England. I believe, however, that New-Jersey is the only state in the Union, wherein the law affects the whole state. Other states have enacted laws, only to suit particular counties within their borders, upon the request of the

inhabitants, petitioning for the protection of the game of their neighbourhood. These laws are only noxious to unprincipled gunners, for, the man who hunts for recreation, and is satisfied with a moderate quantity of game, is ever pleased with wholesome laws; and such can mostly find a welcome among the farmers of the hospitable state of New-Jersey at all times, when the objects of his sport are not wantonly destroyed, and his privileges abused by ungentlemanly conduct. I.

New-Jersey, January 4, 1832.

From the New-England Galaxy.

SOME PASSAGES FROM THE DIARY OF A SPORTSMAN.

It has been wisely said by men of olden time, that a poet must be a poet by birth, and that no education can communicate to him that inspiration which nature herself has neglected to infuse into his mind. It is not our province at this time to support or deny the truth of this position, but simply to advance another, viz. that a sportsman also is such only by birth. The propensity to indulge in field-sports, must develope itself in his very childhood; it must be to him as a sort of second nature; it must be a free, spontaneous impulse, which cannot be resisted or controlled; which shall lead the mind imperceptibly to fasten itself upon the enjoyments to be received in the fields, or on the flood; and render the body impatient and comfortless when restrained from its favourite pursuit.

We are firmly satisfied of the correctness of this belief, from observing how very decided is the aversion to field-sports in one part of the community, while the other is equally sincere in its love for them. And this dislike, or this partiality, does not appear to vary, in any one individual, in their degrees of strength; but in nearly every instance, continue the same at all times,—undergoing no material alteration. If they do suffer change, the partiality is only confirmed, and the dislike augmented.

Our own fondness for Sporting, first manifested itself in an ardent love for Angling. And here we would remark, that we shall employ the term Sporting, as equally applicable to the use of the rod as the gun. Our first acquaintance with the rod, (we mean the *angling* rod,) commenced during our school-boy days, and bears even date with our earliest and happiest recollections. It was then our chief, and only unalloyed amusement, and served to sweeten many a tedious task, and many a heavy hour of scholastic slavery. If at any time we were degraded to the foot of the class, and our head disgraced with that vile badge, the "fool's cap," we would console ourself with the delightful reminiscences of the rod and line, and comfort ourself accordingly. If at any time the master's rod visited upon our poor back the iniquities and deficiencies of the head which surmounted it, that same head would be busily at work, with delicious thoughts of a much longer and less painful rod, and compensate thereby the poor body for the anguish it had caused it. If a neglected lesson occasioned a temporary imprisonment in a dark room, our fancy would beguile the dreary hours, and chase away the gloom, with the anticipated Saturday afternoon, and the overflowing basket of shining fish.

But our reminiscences of those holidays, are overcast by one gloomy cloud, which will for ever remain above the horizon of our existence, and will cast its shadow upon many bright hours to come, as it has done on many a blessed hour that has past and gone. The thought of the painful accident which we are about to record, will often obtrude itself upon our mind when its reception is least welcome and least anticipated. In the very midst of our pleasure and hilarity, it will mingle itself with our thoughts, like the abrupt visitation of death into a happy and rejoicing family circle.

Charley —— our earliest friend and school-mate, was a noble, high-spirited little fellow, with a thousand good qualities, and no evil ones, that ever we could discover. He seemed to acquire the most difficult task as if by intuition, and while we were slowly bungling over its first paragraph, he would nimbly run it through to the end, and then lend a helping hand to extricate his friend from the quagmire of learning. He was in short a kind of admirable Critchon, and sustained the lead in every thing. He was not only the best scholar, but also the staunchest champion, the fleetest runner, and, (what I considered to be the most praiseworthy,) the most adroit angler in school. Some how or other he seemed to exercise a charmed influence over the fish, for they would at times, leap at his hook with avidity, while they would turn up their honourable noses at our own, as if they scorned to perish by any other hand than his.

One bright Saturday afternoon in Summer, we were together as usual, at our old fishing-station, under the ancient rope-walks (now removed) at the foot of the Common, regardless of every thing in the universe, excepting the glorious nibbles which were constantly twitching the buoys of our lines under water. The prey was uncommonly plenty, and we protracted our diversion hour after hour, till at length the evening shadows that began to creep densely over the waves, admonished us to be gone. We were in the very act of departing, when to my unutterable agony, I heard one heart-rending scream, a plunge

into the water,—and poor Charley was lost for ever. The tide was then coming in, and every instant increasing; there was no help at hand, and we were both unable to swim. The agony of horror condensed into that one little moment, cannot be conceived or expressed in volumes. It seemed, that if the sum of a whole life of misery, were united in one wretched instant, it could not have inflicted more intense torture than I then felt. I looked on the darkening and turbulent waters, as they hurried along, and saw the supplicating agony of his upcast look, and the convulsive motion of his limbs, as he struggled with the elements, and without pausing to consider the consequences of the act, plunged in, in the vain attempt to seize the arm that was slowly sinking away from my sight; but it eluded my eager hand, and his cry for help was choked by the angry waters, for ever. I had fortunately retained my grasp on the low timbers on which we had been standing at the time of the accident, and to this circumstance I owed my own preservation. I immediately raised an alarm, and search was speedily made with the aid of lanterns, but the body of poor Charley continued to slumber that night in the bosom of the billows. On the morrow it was discovered, and followed to its narrow habitation by his sorrowing schoolmates, but none followed the little coffin with such a bursting and heavy heart, as did the one who has endeavoured to record the event.

The natives of old Massachusetts seem to possess a natural fondness for field sports; and as the old musket which hangs over the ingle in the farmer's kitchen, is transmitted from sire to son, and in this manner successively passes into the hands of many generations, so also the ardent inclination to use it, is transmitted with it. As the venerable old man sits in the centre of his children, at the winter fire-side, and suffering his memory to return to the days of his youth, recounts to them the glories and the hardships of his Revolutionary adventures, his finger naturally points to the time-worn weapon which occupies the peg over the mantel, and which was his companion in many a bloody field. Then does his eye kindle again with the martial spark, which the lapse of half a century has been unable to extinguish, as he remembers the day when he left his plough in the furrow of his father's field, and shouldered his musket, and hurried away to have a shot at the red-coats at Lexington. Then does his aged bosom throb with excitement, as he calls to mind that bright morning when with hands trembling with ardour, he buckled his little knapsack to his shoulder, and hastened away with his father and brethren to fight under the eye of old Putnam, at Bunker Hill. He relates, with almost childish exultation, how that, hour after hour he continued to blaze away at the regulars, till at length not a cartridge remained in his box, and the point of his bayonet, and the butt of his musket, were his only means of defence. With that same well-tried weapon, and animated by the same patriotic spirit, he followed his darling Washington through the glorious wars of the Revolution, and shared in the perils of Yorktown, Trenton, Monmouth, Bennington, Ticonderoga, White-Plains, and Stony Point.

If you enter any remote farm-house, embosomed amidst deep woods and lonely hills, you will find ancient muskets, and fowling-pieces, deposited in every corner, and the huge powder-horn, and rudely-fashioned shot-belts, depending from the wall. You will see, also, as trophies of rustic skill, huge antlers of the deer, displayed with an ostentatious pride by the honest farmer, and the skin of the fox, or the body of the crow and hawk, nailed, *in terrorem*, against the broad barn-door. The former of these is transmitted as a family heir-loom, and is valued accordingly, and is pointed out by the sire to the son, with much pardonable pride, as the relic of a noble species of game, often pursued and conquered in the days of his youth; but now, like the Indian race, nearly exterminated, and unknown in the land.

In the secluded villages of New-England, every farmer's son, (over two, and under seven feet in altitude,) is the owner of a rod and gun, with the former of which he scampers away to the neighbouring river, and with the latter to the surrounding woods, whenever he can elude the old man's eye, or at such times as he can lawfully call his own, after the labours of seed-time or harvest have been completed. Their intimate familiarity with every retired path in the forests, and every tangled glade on the hill-side, usually renders them successful, if not adroit sportsmen. Notwithstanding the wretched state of their equipments, they will often contrive to *bag* game superior in quality to that which falls to the share of a crack sportsman, over the same grounds. It is not a little curious to observe the very different results of their respective exertions, after a comparison of the means and appointments of the two parties, differing as they do, *toto cœlo*.

The one, for instance, is followed by a pointer, a setter, or spaniel of approved breed; and the other by a nondescript little cur, whose parentage would defy the most practised genealogist in canine pedigree to trace; the one carried a thirty-two inch double-barrel, bearing the stamp of a foreign Manton, or a domestic Bishop, while the other groans under an unwieldy piece of artillery, as long as a steeple, and which cannot be sustained without the aid of a *rest;* the one is provided with the choicest Lady-Johnson, or Dupont, and with shot of the right number,—while the other employs a vile compound which is slow to ignite, and even after that much-desired event takes place, burns with the tardy

alacrity of a "wet fuze." He uses at the same time, by way of shot, certain pellets of lead, consisting of goose and mustard shot, mixed indiscriminately, with a small sprinkling of slugs, pebbles, and broken nails. Yet, with all these disadvantages, the rustic fowler accomplishes miracles, and after disposing of a portion of his spoils to his less fortunate rival, returns home at evening covered with feathers and glory.

If, indeed, his war-worn weapon holds, in many cases, its proprietor in suspense, by its habit of *hanging fire*, it *does* explode at last, and rarely misses its aim. The weapon, like poor human nature itself, has its faults as well as its virtues, which serve to counterbalance each other. Among the most prominent of the former is a vicious propensity to recoil, to upset the youthful musketeer, and in suffering the charge to escape in about equal proportions at the breech and at the muzzle; one half of which in fact singes the eyebrows of the shooter, and the remainder the feathers of the shootee. So also the little beast which accompanies him, has its good as well as its evil qualities, and although it scampers through the bushes without the direction of either training, reason, or instinct, it often contrives to stumble upon the covey or the quarry, which the nose of the more systematic pointer had not detected.

One reason, perhaps, which may be assigned for the different success of these two classes of sportsmen, is that the less scrupulous one is anxious to destroy as much life as possible, and believing that all is fair in sporting as in war and politics, he fires into a full covey before they have taken wing, and, in his desire to husband his scanty stock of ammunition, generally contrives to creep so near, that he kills a large portion of them at a single shot. He does not scruple in taking advantage of any and all means, fair or foul, that may aid him in the attainment of his ends. He has no respect, moreover, to the factitious rules of sportsmen, for the preservation of game, and believing that one bird in the bag is worth a score in the bush, he slays without distinction both young and old. But the more scientific sportsman observes certain legal rules, and obeys those nice restrictions established by his craft, and shoots only at proper times, and even then scorns to fire except at a bird upon the wing, and carefully avoids striking any that are not *in season*. Many species of game which would scarcely escape from our rustic friend, would be disregarded by him as unworthy of his aim.

And here, we have a few remarks to make in relation to Sporting Dogs, which may be properly introduced in this connexion. The breed of valuable animals of this description with us, has been much improved during the last three or four years, owing to the importation of them from England and Spain. Valuable animals are annually increasing, while those of a spurious kind are in equal proportion disappearing. The hue and cry raised against poor Tray last summer, about the period of the dog-day panic, operated severely against the more ordinary species of animals. Poor Tray and his brethren being unapprised of the proscriptive edict which had issued against them, and their natural guardians taking no precautions for their preservation, it naturally followed, that they were kidnapped by the cart-load, and despatched by the axe or the bow-string, without the merciful interposition of jury and verdict. They were adjudged guilty, (by every brutal boy in the street,) forasmuch as they were taken at large, without the specified collar, and within the prohibited period, and were executed without further ceremony. Dogs of a better description, on the contrary, were carefully preserved from the snare laid for them, and by being deprived of their liberty, escaped with their lives.

And now, when the "dog-star" no longer rages, and the mercury falls below cipher, one would naturally suppose that this persecuted race might enjoy an interregnum of quiet. But poor Tray is unfortunately considered a desirable *subject* for medical investigation and surgical skill, and is (we are led to think) ambushed, scalped, electrified, anatomized, galvanized, and we know not what else, whenever his evil fortune throws him into the power of the enemy. We warn ye all, therefore, Dash, Rake, Duff, Tray, Towser, Lion, Argus, Pluto, and the rest, to keep "a bright eye," and beware of all persons having a medical look, or you will be conveyed away by ruthless hands, and immolated upon the board of some medical Moloch. These inquiring physiologists are no respecters of persons, and will as willingly submit to the edge of their scalpel or to their galvanic batteries, the muscles and nerves of the sagacious setter and pointer, "the wiry terrier gaunt and grim, and greyhound with his length of limb," as those of the veriest vagabond of the kennel. If, therefore, ye do not desire to become involuntary martyrs to the cause of medical science, be wary and vigilant, for it will require all your vigilance of eye and scent, to baffle the designs of your foe. If in the course of your daily rambles you encounter any person with a Bell or a Wistar, or any other volume rich in anatomical lore, in his hand, avoid him as you would the Cholera, or by his fascinations he will lead you on to your undoing.

Poor Tray! thou art indeed a noble and most affectionate animal, and wherever thy regards have been once bestowed, there they will remain, throughout all persecution and all change. His attachment is often more stable and true than woman's love or brother's friendship. Human faith often changes to treachery; human promises and protestations often prove to be but hollow words and deceitful

breath; and human affections, cemented by many a kind and liberal act, and strengthened by many a worthy deed in the intercourse of life, too often are estranged by a single thoughtless word spoken in anger, or by some sudden and calamitous reverse of fortune. But the attachment of our dumb friend and follower is often far more enduring and disinterested. He will sustain neglect, will submit to hardship and starvation, and yet continue faithful and affectionate to the last, following his lord through all his adversities, from the very pinnacle of his affluence to the depths of degradation and poverty.

Here, we will venture to insert a few rough lines intended to commemorate the virtues of a departed favourite; and if they offend the refined taste of any of your readers and contributors, we will only request them, just to sit down and write better, to suit themselves.

Thy master, by the woodland tree
Has made thy simple grave, poor Tray!
It is the latest rite, which he,
Can to thy humble relics pay.
Thy bones have had a decent bier;
Thy memory, an honest tear.

The greenest spot in all the wood,
I've chosen for thy place of rest,
'Tis sheltered from the North-wind rude;
'Tis open to the sweet South-west;
And summer suns will love to shine
Upon that verdant mound of thine.

Full many an hour have we, my dog,
Beguiled in this obscure retreat,
I, loitering on yon weed-grown log,
Thou revelling in this clover-sweet,
—No more we come, for thou hast pass'd
That bourne which I must reach at last.

And shall that bright regardful eye
Ne'er watch thy master's rest again,
And shall that blithe, rejoicing cry,
Ne'er startle these deep woods again;
Ne'er rouse the feeding partridge more,
Or wild-duck on the lonely shore!

No, it is hushed in silence deep,
—Corruption's awful quietness!
And the bright eye is shut in sleep,
The slumber of forgetfulness!
Thy frolics, and thy sports no more
Will charm as they have charmed of yore.

But summer birds will visit thee
And sing their sweet songs at thy grave;
The robin's tuneful melody
Will mingle with the passing wave
Which whispers by thy turfy cell,
—The winding brook thou loved'st so well.
The wind-flower and the violet
Thou spared'st for their rich perfume,
Will in the spring-time not forget
To hang their blossoms o'er thy tomb;
And sometimes to thy lowly bed
Thy master's footstep will be led.

There are numerous anecdotes which serve to illustrate the sagacity and fidelity of this noble animal in our possession, and which, if we continue to furnish further extracts from our diary, we shall gladly insert, for we do not think that a proper measure of respect and regard has been at any time accorded to him. However he may be esteemed by the world at large, to the sportsman he is invaluable, and whatever may be said relative to his nature, qualities and habits, cannot be, on the whole, uninteresting. M.

[*To be continued.*]

A DAY'S HUNT ON THE BLUE MOUNTAIN,

OR, MY FIRST ESSAY AFTER DEER.

Dear ———

No doubt you are still plodding away at the dull pursuits of a *city* life, in your dusty old corner,—yawning, and stretching your tired limbs, a very slave, cursing your hard fate,—whilst here am I, amongst the wild scenes of nature, another Leather-stocking, blessing the "Great giver of life" that there is air to breathe in freedom from the constraints of civilization;—regions where the laws of the white-skins have scarcely reached, and where the wild *creturs* of the woods can sport unharmed;—scenes so wild and rough and rugged, that we cannot but cry shame on the tame pencils, that pourtray nature as flat as a floor, and withal smooth, neat, and pretty. Why here I stand, on the point of a mountain-ridge, that the rain has centuries ago, washed clear of every thing like earth, leaving nothing but loose rocks, tumbled one on another; and out from among them grow, crooked, gnarled trees, bare of leaves at this season,—their rough, broken bark covered with moss, which hangs like fringe from every limb,—the rocks also are spread over with the same pensive garb. It is, indeed, a moss-covered spot; every thing is tinted with its colouring, grey, hoary, and ancient. This universal sombre tone has this moment changed to one of golden hue; for the sun has burst through the thick clouds, and brightly pictures every thing at hand on the dark back ground of the opposite mountain, and the deep black hollow where the Mahanoy flows, unseen, some hundred

feet, beneath. The innumerable crooked branches present quite a fantastic appearance; for the long moss, in many places, hangs in festoons from one limb to another, curiously gilt with the fiery tints of the setting sun. But what strikes my feelings more than all, is the *solitariness of nature*. In these wild regions all is mute as death—the numerous feathered tribes that abound in the regions of civilization are here almost unseen—not a sound is heard from any animated thing—the wind and the waterfall, alone, seem to have being. To one bred up in the busy scenes of a city, it seems, indeed, like death.

I said that the creatures of the woods could have sport unharmed, but I believe there is no place where the wily hunter does not pursue them; for I yesterday chanced to fall in with one who had lived to hoary age amongst them, numbering the deaths of some hundred Deer, Bears, and other animals, that his unerring rifle had brought down. We soon became acquainted, and agreed to take an excursion next day—and at early dawn I was awoke with "Come, *Hunter*, its time to be a moving." The appellation was to me quite flattering, for I had never been on a hunt in my life. We were off before day-light, and reached our ground just as the sun began to gild, with a pale yellow light, the abrupt side of the mountain opposite our path. We passed on to the bottom, and crossed the black, rolling Mahanoy, hurrying on, torrent-like, over its rocky bed. Gaining the opposite side, we had to make our passage through a swampy piece of ground, tangled with brush, and underwood, and fallen trees. We then separated,—the old hunter taking the right, his comrade the left, and myself the centre. Stepping silently and cautiously along, we pursued our course—"Still Hunting," as they call it—the dogs being kept close in behind us, and not allowed to go out. We had passed on an hour or more in this way, through woods that had been annually burnt out by the hunters to keep down the undergrowth,—when, on a sudden, a sound new to me, but instantly understood, of the quick bounding of a Deer, struck my ear. I stopped, and found from its increasing loudness, the animal was coming directly towards me! All on the alert, I expected to signalize myself, and win the appellation of *Hunter*, that the old man had given me; but my hopes were dashed—for the heavy sound of his hoofs, as at each bound he struck the earth, changed in an instant, for he had caught my scent, and altered his course. In another moment, the crack of my companion's rifle, on the left, told me he had gone in that direction. On coming up to him, I found he had taken a chance shot, whilst running, and missed. Patience is the hunter's motto,—so again we went, carefully and silently on, not rustling a leaf if it could be avoided. We had now entered a thick hemlock grove,—a rough, hilly piece of ground, with two or three rivulets running through it, when, again, the smart crack of the rifle was heard—*look out*, was the cry—the animal was wounded, and coming in my direction; he however turned, and took the course of one of the rivulets, making for the creek, to elude the dogs. After an hour's search, we could discover no trace of him; still the old hunter would not give up, persuaded that he was secreted in the tangled swamp. Perseveringly we hunted the whole spot, sometimes up to the waist in water, at others clambering amongst fallen trees and bushes. A quick sign from the hunter stopped us; his practised ear caught a low, wailing sound—again it was repeated, and turning towards the spot from whence it came, I saw through the bushes, lying crouched in a hollow, formed by the upturned roots of a fallen tree, a sight that, for a moment, brought a painful feeling to the heart. There lay the wounded dam, her head turned over on her side, and beside her stood a young fawn. Game, however, was our object. I kept down the kindly feelings of nature, and cautiously raising my piece, I sent the deadly bullet through her head. The young thing bounded off, but in a moment came back, bleating after its lost parent, and followed the party home. The old hunter was touched with pity at its fate, and he continues to nurse it with a kindness and fondness that proves what the old man says—that from him it shall never part.

Farewell,

B. B. B.

Blue Mountains, Nov. 5th, 1831.

STANZAS

TO THE MEMORY OF ALEXANDER WILSON, THE ORNITHOLOGIST.

He asked to be laid where the birds might sing
Their matins around his tomb,
Where the earliest grass of the year might spring,
And the earliest flowers bloom.

For Nature had filled his noble breast,
With a love that could not die;
And he thought it were sweetest to sink to rest,
Where, in life, he was wont to lie.

'Mid the beautiful creatures that tenant the wild,
His brightest days were passed,
And the voices he loved, when a frolic child,
Were the voices he loved to the last.

It was meet they should give him a verdant tomb,
Where the flowers, unplucked, might throng,
And the bright-winged birds, unmolested might come,
With their sweetest, softest song.

They made his grave by the old church towers,*
Away from the haunts of care;
There, breathes the odour of Summer flowers,
And the music of birds is there. C. W. T.

* Swedes' Church, Philadelphia.

GAME LAWS OF NEW-YORK.

OF THE PRESERVATION OF DEER AND CERTAIN GAME AND ANIMALS.

1. No person shall kill any wild buck, doe, or fawn, at any time during the months of January, February, March, April, May, June, or July.

2. Every person who shall expose to sale any green deer skin, or fresh venison, or who shall have the same in his custody, at any time during the months aforesaid, shall be deemed to have violated the first section of this title, unless he prove that the buck, doe, or fawn, of which such green skin or venison was a part, was killed by some other person.

3. Whenever any complaint shall be made to a justice of the peace, that a violation of the first section of this title has been committed, and that any green deer skin, or deer's flesh, is concealed, he shall inquire into the matter, and if satisfied by competent testimony, that there is reasonable cause of suspicion to justify such complaint, he shall issue his warrant to any constable of the town, authorizing a search, in the day time, of any house, store, out-house, or other place, where such skin or flesh is suspected to be concealed, and search shall be made accordingly.

4. Whoever shall violate the first section of this title, or shall conceal any green deer skin, or fresh venison, shall forfeit $12 50.

5. No person shall at any time hunt, pursue, or destroy any wild buck, doe, or fawn, with any bloodhound or beagle; and whoever shall offend herein, shall forfeit $12 50.

6. No person shall set any trap, or any spear made of iron, or other metal, or any sharp stick, either in or out of a pit, for the purpose of catching Deer, nor shall any person watch in the night time for the purpose of shooting Deer, within thirty rods of any highway. Whoever offends against either of these provisions, shall forfeit twenty-five dollars.

7. No person shall kill any Heath Hens, within the county of Queens, between the first day of January, and the first Wednesday in October; nor in the county of Suffolk, between the first day of January and the second Wednesday in September; nor shall any person kill any Quail, or Partridges, in the counties of Queens, Kings, Suffolk, and New-York, between the fifth day of January and the twenty-fifth day of September; nor in the county of Albany, between the first day of March and first day of October; nor shall any person kill any Woodcock, in any of the counties above named, between the first day of February and the first day of July; nor shall any person kill any Pheasants in the county of Albany, between the first day of March and the first day of October.

8. Whoever shall offend against the provisions of the last section, by killing any Heath Hen, shall forfeit twenty-five dollars; by killing any Partridge, one dollar; and by killing any Quail, Woodcock, or Pheasant, fifty cents.

9. Any person who shall expose to sale any Heath Hen, Woodcock, Quail, Partridge, or Pheasant, in either of the said counties respectively, or shall have any of the said game in his possession in either of the said counties, during the time when the killing of such game is forbidden by law, shall be deemed guilty of killing the same game, within the time prohibited.

10. No person shall kill any Muskrat at any other place than along the line of some canal or artificial dam, or embankment, between the first day of May and the first day of November, in any year; whoever offends against this provision, shall forfeit one dollar for every Muskrat killed.

11. The penalties prescribed in this title, shall be sued for, and recovered by and in the name of the overseers of the poor of the town where the offence was committed, in an action within three months after the commission of the offence, and shall be applied for the use of the poor.—*Revised Statutes of New-York, Vol. I. page* 701.

From the American Turf Register.

THE EAGLE AND THE WILD CAT.

Prairie des Chiens, October 4, 1831.

A FEW days since I received a letter from Dr. R. M. Coleman, of the army, who is stationed at Fort Armstrong, two hundred miles below this, from which the following is an extract, viz.

"A few days since I went out with my dog and gun, with the intention of hunting pheasants. When I had got

near the ground I expected to find them, I heard at the distance of fifty or sixty yards, a squirrel chattering very loquaciously, as if in distress. I approached within some twenty or thirty paces, and saw the squirrel running about the top of a tree in apparent great fright. It occurred to me, that a snake was after it; I stood still for a moment, and traced the tree from the squirrel down to within some ten or twenty feet of the ground, and behold there was a Lynx, or what is here called a Wild Cat. My gun being loaded with small shot, I commenced to put in a few larger, but whilst in the act, the Cat leaped from the tree. Knowing that my dog would get much injured if he caught the animal, I would not suffer him to pursue it. In the direction which the Lynx run, I saw a very large Black Eagle, sitting on a tree, I mounted my horse and pursued my hunt about three quarters of an hour, when, by accident, my rambles brought me to the tree I had seen the Eagle perched on; at that moment, my dog made a dead set very near a pile of brush; I halted and looked, there was an Eagle, with its wings extended on the brush; not wishing to shoot it, I approached, expecting it would fly, but on looking closer, I saw under the Eagle a Lynx. I dismounted, and secured the Eagle, and took the Lynx up, scratched and pierced in many places; one of its eyes was completely gouged out, and it could not have been dead more than twenty minutes; there were a great many feathers scattered about the place, and other indications of there having been a tremendous fight. I took the Eagle to my quarters and kept it for twenty hours, when it expired. On examination, I found it wounded in several places, fatally under the wings on both sides. I have no doubt that this was the Eagle and Lynx I had first seen; that the Eagle was the aggressor, and suffered for his temerity."

Respectfully your ob't servant,

R. B. M. *U. S. A.*

Extracted from Silliman's Journal.

ON HABITS OF CLEANLINESS IN BIRDS.

It is a fact, not generally known, that the claws of Birds are used as combs to rid the plumage of vermin; whence Birds which have short legs are most infested by insects. The expedients, which Birds, characterized by short feet,—the waders which, from the inflexible nature of their legs, and the geese tribe, from the opposition to scratching, offered by the membrane between the toes, are put to, in order to get rid of their vermin, are well deserving of attention, as illustrating the ingenuity of animals, and the curious provisions made by nature for their cleanliness. When Birds, by accident or imprisonment, are deprived of the natural means of ridding themselves of vermin, they often fall victims to their attacks. The author, walking on the coast of Northumberland, disturbed a bird, which flew heedlessly, as if injured. On shooting it, he found it was covered with vermin, especially about the head, and on further examination ascertained that it had lost one leg, and was thus deprived of the means of ridding itself of these insects. A nest of young swallows had been hatched, and they had attained considerable size, when a change was made in the window, which frightened the parents; from that time, they continued to feed their offspring, but never entered the nest. The young ones soon became sick, and perished, and on examination the nest was found to be crowded with acari of large size.

Poultry which run about in stony or paved yards, wear away the points of their claws, by friction and digging, which renders them unfit to penetrate their coating of feathers; they are, therefore, more covered with vermin, and in consequence more sickly than fowls from the country.

[*Jour. of Roy. Inst. Feb.* 1831.

KILLING LARGE INSECTS.

As many of your young entomological readers may have found equal difficulty with myself in ascertaining the readiest method of killing the larger Moths when captured, I trust you will excuse my troubling you with the following remarks. In the *Journal of a Naturalist*, prussic acid is suggested; but that is not only very expensive, but a most dangerous thing to have any dealing with. I have tried hot water, steam, hot needles, ether, sulphur, aqua fortis, &c. but found none so decidedly effective as *oxalic acid*, which I thus apply:—First, shape a nice small quill into the form of a very sharp pointed blind pen, (i. e. a pen without a slit,) then seize your Moth, with the finger and thumb between the wings on the under side, holding its head towards you, firmly, but with as little pressure as possible. Then dip your pen-shaped quill into the acid, and run it into its thorax, just below the head, or between the first pair of legs; and after two or three quick applications, the Moth will be found perfectly dead. This is not only the most humane and expeditious, but very economical, as twopence worth of acid would be sufficient to destroy subjects to fill a whole cabinet. As I am writing for the information of your young friends, I may be excused for adding, that oxalic acid is in the form of crystals, which must be reduced to a liquid by a little water.—*Lon. Mag. of Nat. Hist.*

COUGAR - PANTHER.

THE COUGAR.

FELIS CONCOLOR.

[Plate III. Vol. 2.]

Felis Concolor et discolor; L. Gmel. *Syst. Nat.* i. *p.* 79. *sp.* 9—12.—Temminck, *Monog de Mam. livrais* iv. *p.* 134.—*Felis Concolor,* Linnæus—Godman, *p.* 291, *vol.* i.—*Le Cougar,* Buff. *Quad. vol.* ix. *tab.* 59; *Cougar de Pennsylvanie et Cougar Noir;* Buff. *Supp.* iii. *p.* 41, 42.—*Pouma;* Garcilasso, *liv.* viii. *chap.* xviii.—*Gouzara,* De Azzara, *Quad. du Paraguay, vol.* i. *p.* 133.—*Puma;* Pennant, *Art. Zool. vol.* i. *p.* 49.—Menagerie of Living Animals, exhibited in Philadelphia, winter of 1831–2.

The interesting animal, from which our drawing is made, (and which we consider a perfect representation of the original,) is well known to the public as belonging to the celebrated menagerie of wild animals, now exhibiting in the city of Philadelphia. This Cougar was taken on Red River, near Natchitoches, in the state of Louisiana, by a hunting party, after a hard battle, in which he destroyed several dogs, and was at last secured by means of long poles, and taken to New-Orleans, where he was purchased, and added to this menagerie. He is an uncommon fine specimen of the species, and will measure eight and a half feet from the nose to the tip of the tail, and was supposed to be five years old when taken; but no treatment, either kind or severe, has subdued his disposition sufficient to permit him to be handled with safety.

The Cougar, (erroneously called Panther, or *Painter,*) is a common inhabitant of the United States, and is found on the continent of North America, from Canada to Patagonia, and from the Atlantic to the Pacific Oceans. In South America, it is called the "American Lion;" but by many foreign naturalists and travellers, the *Puma.* This animal is the largest of the cat kind in North America, and with the exception of the Grisly and Polar Bears, the most ferocious and powerful. The severity of the northern climate, however, has much influence on their ferocity and rage, and are considered, in these particulars, as inferior to those found south of the equator.

The Cougars are particularly fond of mountainous districts, and in the wild and unsettled parts of Pennsylvania, and other states, are frequently met with, but are much more rare than in former years; for, as population is increasing, they are either killed by settlers, or driven to more distant and secluded places,—and being an enemy alike to man and beast, they become objects of persecution, wherever they are found.

In South America, these animals, which are in numbers on the Pampas and the Great Cordillera, afford fine sport to the Indians and Gauchos, or natives of the plains, who hunt them altogether for diversion, as we have no evidence that their skins are valuable, or that the flesh is eaten by the natives. The manner of hunting them is generally on horseback, accompanied by dogs, and armed with lassos, and destructive weapons called string-balls—(these being hard wooden balls, secured to the end of ropes, or pieces of hides)—thus, when a Cougar is aroused and attacked by the dogs, and the issue of the battle doubtful, the Gaucho generally puts an end to the strife, by striking the animal over the head with one of these string-balls, the momentum gained by whirling this instrument a few times, being so powerful as to deprive the animal instantly of life; or should the dogs refuse to make an attack, and have a Cougar at bay, the Gaucho rides sufficiently near as to hurl the lasso over its head, and then by gallopping off, drags the enemy on the ground, while the dogs follow, and tear it to pieces.

In the United States, the destruction of this animal is usually effected with the rifle. Our hunters, by reason of great perfection in shooting this instrument of death, and their familiarity with the Cougars, regard these animals in no other light than certain victims to their unerring aim; few indeed escape, when once the keen eye of the hunter ranges the barrel of his rifle, or the new fallen snow betrays the footsteps of these wily destroyers.

There is scarcely a brute animal on earth, but will flee the face of man. Whether it is the dignity of his form, or the fear implanted in all the brute creation by the Author of their being, which causes them to acknowledge men "as the lords of creation,"—certain it is, that among even the most ferocious animals, very few can be found which will venture to attack a man; and when this is done, hunger or desperation is the exciting cause. The Cougar, when hungry, and no longer able to obtain the ordinary supplies of food, or wounded by its adversary, will attack alike both man and beast, fearless of all consequences. Its ferocity is easily excited, and when a painful wound is inflicted, its rage is terrible, and will evince the utmost determination to revenge itself. Many anecdotes may be told, illustrative of this disposition; one or two, however, will suffice. A party of hunters, residents of Delaware county, in the state of New-York, made an excursion after a Cougar, which had frequently been seen prowling about the neighbourhood. Before starting, the preliminary agreed on was, that if the Cougar should be started, and treed, it was not to be shot until each individual composing the party should be present—this agreement broken, a penalty of all the expenses of the day, was to be imposed on the offender. Shortly

after starting, the dogs aroused the animal, and after a chase of a few miles, along the mountains, among rocks and almost impenetrable laurels, it took to a beach tree, and clambered to the top, about thirty feet from the ground, where it crouched, and watched the dogs, which were in numbers barking at the foot of the tree. Among the party was a stranger, who had never experienced a hunt of the kind, and regardless of the penalty to which he would subject himself, resolved at all hazards to shoot the Cougar, if an opportunity offered, and enjoy the satisfaction of having destroyed one of the most ferocious wild animals of our forests. Accordingly he hastened to the scene of action, when he saw the animal resting on the tree, and immediately fired at its heart,—but to his astonishment, instead of killing, he only aroused its vengeance; for the moment he discharged his rifle, the Cougar began to growl and spit, and rip and tear every limb of the tree within its reach, and when on the point of leaping at the hunter, a shot from an unknown rifle, hurled the animal to the ground dead, within ten or twelve feet of the person who first fired, and who being so excessively frightened, and overcome with tremour, that he sunk helpless on the ground; and but for the fortunate intervention of his friend, would have been torn in pieces. Being on a rocky precipice, and the place so overgrown with high laurels, he did not see two of the hunters who had arrived a few moments before him; neither were they aware, that any of the party were present but themselves, until they heard the report of the rifle within a few yards of them, and being experienced hunters, they knew by its actions, that the animal was aiming the destruction of their friend, and the timely interference and unerring aim of Captain W——, only saved his life.

The following anecdote, which is copied from Godman's Natural History, was furnished by the late William Scudder, who had the Cougar, and which is still in the New-York Museum.

"Two hunters, accompanied by two dogs, went out in quest of game near the Kaatskill Mountains. At the foot of a large hill, they agreed to go round it in opposite directions, and when either discharged his rifle, the other was to hasten towards him, to aid in securing the game. Soon after parting, the report of a rifle was heard by one of them, who, hastening towards the spot, after some search, found nothing but the dog, dreadfully lacerated, and dead. He now became much alarmed for the fate of his companion, and while anxiously looking around, was horror-struck by the harsh growl of a Cougar, which he perceived on a large limb of a tree, crouching on the body of his friend, and apparently meditating an attack on himself. Instantly he levelled his rifle at the beast, and was so fortunate as to wound it mortally, when it fell to the ground along with the body of his slaughtered companion. His dog then rushed upon the wounded Cougar, which, with one blow of its paw, laid the poor creature dead by its side. The surviving hunter now left the spot, and quickly returned with several other persons, when they found the lifeless Cougar extended near the dead bodies of the hunter and the faithful dogs."

The Cougar is exceedingly tenacious of its food, and rather than relinquish it, will suffer death. Instances of this kind sometimes occur, which the following anecdote from the same author will show.

"About five miles from Phillipsburgh, Centre county, Pennsylvania, Mr. Mitchell, on the 8th of December, 1825, shot at a buck, (cervus Virginianus,) and wounded him in the shoulder. He followed the animal for some time, and at length perceived him at the distance of about forty yards, lying with his heels upwards, and a Cougar holding him by the throat. The hunter discharged his rifle at the Cougar, and shot it through the heart; when this animal relinquished the buck, advanced four or five yards, and fell lifeless. Having again charged his rifle, and believing the Panther to be dead, Mr. Mitchell, turning towards the wounded buck, was surprised to see another Cougar in the act of pulling down the head; and, as it now appeared, the buck had been held down by both Cougars at the moment the first was killed. The body of the buck was between the hunter and the second Cougar, nothing but the head of which was visible. At this Mr. Mitchell levelled his rifle, and the ball entered it at the angle of the eye. The beast remained still for a few minutes, and then, for the first time, relinquished his hold of the buck, and walked over it towards the hunter, who fired his rifle a second time, and shot him through in the neighbourhood of the heart. At this moment the buck recovered his legs, stumbled over the body of the Cougar, finally extricated himself, and ran off. A third discharge of the rifle, pierced the Cougar with another ball, yet he still remained on his feet, and it was not until the rifle was again discharged, and a fourth ball driven through the back part of the under jaw, that the animal fell and expired. What is most singular is, that the male should not have relinquished his hold of the buck when the female was killed, but continued in the same position until the ball entered his own head, near the eye. The buck ran near a mile before he was finally overtaken, and killed."

The Cougar usually seizes its prey, by springing from trees, while the unsuspecting animals which compose its food, are passing by. The places of watchfulness are generally on old logs, fallen trees, and large limbs of trees projecting over or near deer-paths, and watering places. It frequents salt licks, during the night season, where it often

makes havoc among the visitants of these places. At other times, it approaches its prey by stealth, or stratagem, and secures its victim generally by a sudden bound, and when failing in this, seldom pursues, but sneaks off in search of other objects, as its form, although remarkably strong, and possessing astonishing agility, is unfitted for active pursuit. It is remarkably fond of birds, especially wild turkeys and pheasants; and when wild animals are no longer to be caught, it prowls about farm-houses, and near villages, when it becomes very destructive, by killing hogs, sheep, calves, &c. In attacking animals larger than itself, the Cougar springs on their backs, and never relaxes its hold until the victim falls beneath its power. Its manner of destroying in this case, is by grasping firmly with its fore claws the sides of the animal, and then by ripping the back and loins with its hinder claws, and gnawing through the neck until the vitals are reached, the suffering beast falls, writhing in agonies, or the only possible chance of escape for the poor animal is by taking to water, should any be near, as the utter dislike of the feline species to this element, often causes the Cougar to lose its prey. Smaller animals, such as deer, sheep, hogs and calves, it usually strikes to the earth, and then seizing them by the throat, will commence sucking their blood, or throw them with ease over its shoulder, and depart for a more convenient place to devour its food at leisure.

In its destructive habits, the Cougar resembles the Tiger more than any other animal. The lion, and most carnivorous animals, destroy only sufficient for their present necessities, but the Tiger and Cougar are not only ferocious, but cruel, when necessity no longer requires it. After destroying their prey, they first suck the blood, and should more victims be present, go on destroying so long as subjects for destruction are within their reach. They have a thirst for blood which can hardly be satiated, and delighting so excessively in carnage, they are excited with as much energy in killing the last, as they possessed when destroying their first victim; and this prodigality of life is more strikingly manifested by the fact, that when the carcass of their prey becomes void of blood, or putrid, they forsake it entirely. It is one of those few animals whose ferocity is almost unconquerable; and when friendship and good treatment have in a measure softened its disposition, its constancy is very suspicious, and treachery is frequently manifested towards the hand which is extended in kindness towards it.*

It is when a Cougar has become old, and its claws, teeth, and energies are failing, and can no longer successfully follow wild animals, that it will venture near dwellings for food, or attack mankind. An instance of this kind occurred a few years since in the northern part of this state. A woman who was gathering beans from a small patch of ground in front of a log house, which had just been built in an uncultivated spot, was so teased by the barking of a small dog, which usually remained about the house, that she turned around to chide and drive it away, when to her dismay, she saw, sitting on a large stump, a Cougar, which had been kept in that position by the little guardian dog, from springing at and destroying an infant, that was sitting on the ground within twenty feet of the monster. The unconscious mother had placed her child there, while she completed her work; but on the discovery of the danger it was in, ran and caught it up, and conveyed it to the house, and closed the door; and the last she heard of the beast, was the distant barking of the small dog, which however soon ceased entirely. At dinner hour, the husband returned from his work, and having with him his rifle and large dog, (which were always his companions, when absent from home,) without delay went in pursuit of the monster, so soon as the above circumstances were made known to him, and after following for more than two miles, came up with and shot it,—and hearing nothing more of the little dog, curiosity led him to open the Cougar, in which he found the remains of the little animal which saved the life of his child.

Another anecdote is related of a man that was cutting timber several miles from his dwelling, who as the sun was declining, left his work to return home. He had proceeded only a short distance, when he saw in the snow, (which was a foot deep,) the tracks of a Cougar, which had, during that day, and while he was at work, crossed the path which led to his house. Having his rifle, and the sun being yet above the horizon, he concluded to follow the track in hopes of surprising and killing the animal before dark; he however was not a little surprised, to find that the enemy had made a short, circuitous route, round him, while chopping wood, and crouched itself on a fallen tree, within thirty yards of him, where it had been watching until his departure. But his surprise was still greater, when on pursuing the track further, to find, that the animal had proceeded up to the spot where he had been at work, and

* Instances are recorded of these animals having been tamed, and made as familiar to human society, as the domesticated cat. It is stated that D'Azara, the naturalist, had one, and Mr. Kean, the tragedian, another, which were much attached to them; and an acquaintance of the writer had a pair, which were taken by a boy in Kentucky, after the mother had been killed,—these my friend kept and tamed, and were generally very sociable and playful, but their friendship could never be depended on, for frequently, in the most unsuspected moments, they would show their treachery.

which he had left but a minute or two previous. This daunted the hunter, and he made the best of his way home, as he was convinced the Cougar was after him. Next morning, however, being joined by several hunters and dogs, he went in pursuit, and finally overtook and killed his antagonist,—which proved to be an old, male Cougar, whose teeth and claws were worn out, and which evidently did not possess energy sufficient to make an attack on the man.

When the Cougar is aroused to madness, or in the act of springing on its prey, it usually crouches with its fore legs nearly close to the ground, and the hinder parts somewhat more elevated; the eyes are enlarged and wild, and the muscles of the face so drawn up as to bespeak great ferocity, while the light and shadows of the countenance are beautifully variegated; the ears, which usually stand upright, are now turned downward and backward, and in proportion to its anger, lie closer to the skin. Our Drawing is made from the animal while in this position, it having been excited purposely, by the appearance of the Lama belonging to the same menagerie, before its cage.

The Cougar inhabits mountains, and the most dense forests, and makes its lair in caves, among rocks, and under large logs, and which is generally composed of leaves. It purs frequently, but the usual voice is a loud, terrifying scream, which at times appears like that of a female in distress; but when angry, growls, snorts, and spits at its antagonist. It usually brings forth three kittens at a time, which remain blind for eight or ten days, and differ in colour from the mother, being of a grayish-brown, and marked with still darker brown stripes.

The following description is taken from a very fine specimen, in the possession of the writer, which may be accounted of a medium size:—Length, from the nose to the tip of the tail, seven feet; body slim, legs long, and thick; the fore legs more thick and muscular than the hinder; tail long, and rather bushy; head small; eyes large, and of a pale yellowish-ash; neck, sides, rump, external part of the legs, and the under part of the tail and belly, a pale brownish-red, and, in a particular light, approximate a rich, silvery fawn colour; paws, to the first joint, of a brighter colour than the upper parts; a dark ferruginous, intermixed with a number of black hairs, extends from between the eyes, over the whole forehead, along the back and upper part of the tail to the end, which is back; nose, black; throat, and inside of the ears and legs, of a dirty white; back of the ears black, except the edges, which are whitish; the upper and under lips, of pure white—on each side of the former is a black stripe, from which rise a number of long, thick, and white whiskers; under and over the eyes are patches of a dirty yellowish colour; claws, of a white corn colour, exceedingly curved and long, and covered by a sheath, which is withdrawn by the animal at pleasure—the inner claw larger than the rest.

THE HORSE.

[Continued from page 6.]

"The Horse, of all animals, is that which, with great stature, has the most complete proportion and elegance in every part of his body; and compared with every other animal he appears superior in these respects. The great length of the jaws is the principal cause of the difference between the heads of quadrupeds and of the human species: it is, also, the most ignoble mark of all; yet, though the jaws of the Horse are very long, he has not, like the ass, an air of imbecility, or of stupidity like the ox. The regularity of the proportions of his head, on the contrary, gives him an air of sprightliness, which is well supplied by the beauty of his chest. The Horse seems desirous of raising himself above his state of a quadruped, by holding up his head, and in this noble attitude he looks man in the face; his eyes are lively and large, his ears well made, and of a just proportion, without being short like those of the bull, or too long like those of the ass; his main suits well his head, ornaments his neck, and gives him an air of strength and haughtiness; his long, bushy tail, covers and terminates advantageously the extremities of his body, far different from the short tails of the stag, the elephant, &c. and the naked tails of the ass, the camel, the rhinoceros, &c. The tail of the Horse is formed of long, thick hair, which seems to come from the rump, because the stump from which it grows, is very short; he cannot raise his tail like the lion, but it suits him better hanging down, as he can move it sideways; it is very useful to him to drive away the flies which incommode him: for though his skin is very hard, and is every where furnished with a close, thick coat, it is, notwithstanding, extremely sensible.

"The head of a well proportioned Horse should be lean and small, without being too long; the ears at a moderate distance, small, straight, immoveable, narrow, thin, and well placed on the top of the head: the forehead narrow, and a little convex; the hollows filled up, the eyelids thin, the eyes clear, lively, full of fire, rather large, and projecting from the head, the pupil large; the nether jaw thin; the nose a little aquiline, the nostrils large and open, the partition of the nose, and the lips thin; the mouth of a moderate width; the withers raised and sloping; the shoul-

ders thin, flat, and not confined; the back equal, even, and insensibly arched lengthways, and raised on each side of the spine, which should appear indented; the flanks full and short, the rump round and fleshy; the haunches well covered with hair; the stump of the tail thick and firm; the fore legs and thighs thick and fleshy, the knee round before, the houghs large and rounded, the sinew loose, the joint next the foot small, the fetlock not thickly covered with hair, the pastern large, and of a middling length, the coronet rather raised, the hoof black, smooth, shining, and high, the quarters round, the heels wide, and moderately raised, the frog small and thin, and the sole thick and hollow.

"But there are few Horses in which this assemblage of perfection is to be found. The eyes are subject to many complaints, which are sometimes difficult to be known. In a healthy eye we ought to see through the cornea two or three spots of the colour of soot, above the pupil: to see these spots the cornea must be clear, clean, and transparent; if it appears double, or of a bad colour, the eye is not good: a small, long, and straight pupil, encompassed with a white circle, is also a bad sign; and when it is of a bluish green colour, the eye is certainly bad, and the sight dull.

"It is very easy to judge of the natural and actual state of the animal by the motion of his ears; when he walks he should project forwards the points of his ears; a jaded Horse carries his ears low; those which are spirited and mischievous, alternately carry one of their ears forward and one backwards; they all carry their ears on that side from which they hear any noise, and when any one strikes them on the back, or on the rump, they turn their ears back. Horses which have the eyes deep sunk in the head, or one smaller than the other, have usually a bad sight; those which have the mouth dry are not of so healthy a temperament as those which have the mouth moist, and make the bridle frothy. A saddle Horse ought to have the shoulders flat, moveable, and not very fleshy; the draught Horse, on the contrary, should have them flat, round, and brawny: if, notwithstanding, the shoulders of a saddle Horse are too thin, and the bones show themselves through the skin, it is a defect, which shows the shoulders are not free, and consequently the Horse cannot bear fatigue. Another fault of a saddle Horse is, to have the chest project too forward, and the fore legs drawn too much back, because he is apt to rest on the hand in galloping, and even to stumble and fall: the length of the legs should be proportionable to the height of the Horse; when the fore legs are too long, he is not sure footed,—if they are too short, he is too heavy in the hand: it is a remark, that Mares are more liable than Horses to be short legged; and that Horses in general have the legs thicker than Mares or Geldings.

"One of the most important things to be known, is, the age of the Horse: it is from the teeth that we obtain the most certain knowledge of their age; the Horse has forty—twenty-four grinders, four eye teeth, and twelve incisive teeth: Mares have no eye teeth, or if they have them they are very short: the grinders are not instrumental to the knowledge of their age,—we form our judgment from the front and eye teeth. The twelve front teeth begin to show themselves fifteen days after the birth of the foal; these first teeth are round, short, not strong, and drop out at different times, in order to make room for others; at two years and a half the four front middle teeth drop out the first, two at top, and two at bottom; a year after four others fall out, one on each side of those which are already replaced; at about four years and a half, four others drop out, always on the side of those which have been replaced; these four last milk teeth, are replaced by four others, which do not grow near so fast as those which replaced the first eight; and these four last teeth, which are called the wedges, and which replace the four last milk teeth, are those by which we know the age of a Horse: these are easily known, since they are the third as well at top as at bottom, beginning to count from the middle to the extremity of the jaw; these teeth are hollow, and have a black mark in their concavity; at four years and a half, or five years old, they scarcely project beyond the gums, and the hollow is plainly seen; at six years and a half it begins to fill up, the mark also begins to diminish and grow narrower, and so continues till seven years and a half or eight years, when the hollow is entirely filled up, and the black mark effaced: after the animal has attained eight years, as these teeth do not give further information of the age, we generally judge by the eye teeth or tusks; these four teeth are placed at the side of those which I have just now been speaking of; the eye teeth, as well as the grinders, are not preceded by others which fall out; those of the inferior jaw usually come out first at three years and a half, and the two of the upper jaw at four years, and till they are six years old, they are very sharp; at ten years old, the upper ones appear already blunt, worn, and long, because they are bare, the gum wearing away with age, and the more they are worn away the more aged the Horse is: from ten till thirteen or fourteen years, there is hardly any indication of the age, but then some hairs on the eyebrows begin to grow white; but this indication is equivocal, since it has been remarked that Horses engendered from old stallions and old mares have the hair white on the eyebrows at ten years old. There are also Horses whose teeth are so hard that they do not wear, and upon which the black mark

subsists, and is never effaced; and others which have the mark in the mouth as long as they live. We may also know, though with less precision, the age of a Horse, by the ridges of the palate, which are effaced in proportion to his age.

"It has been remarked, that studs situated in dry and light countries, produce good-tempered, swift, and vigorous Horses, with nervous legs and hard hoofs; while on the other hand, those which are bred in damp places, and in fat pasturage, have generally the head large and heavy, the legs thick, the hoofs soft, and the feet flat. This difference arises from the climate and food, which may be easily understood; but, what is more difficult to be comprehended, and what is still more essential than any thing that has been said, is, the necessity of always crossing or mixing the breed, if we would prevent their degenerating.

"Mares usually go with foal eleven months and some days; they will breed commonly to the age of fourteen or fifteen years, and the more vigorous longer than eighteen years.

"The duration of the life of Horses is like that of every other species of animals, in proportion to the time of their growth. Man, who is above fourteen years in growing, lives six or seven times as long, that is to say, ninety or a hundred years. The Horse, who attains his full growth in four years, lives six or seven times as long, that is to say, twenty-five or thirty years. There are so few examples to contradict this rule, that we should not even regard them as exceptions from which we may draw any precedents; and as robust Horses are at their entire growth in less time than delicate ones, they also live less time, and at fifteen years of age are old.

"The Arabian Horses are the handsomest known in Europe; they are larger and plumper than those of Barbary, and equally well shaped, but as they are not often brought into this country, riding-masters are not able to give an exact account of their perfections and defects.

"The Horses of Barbary are more common, they are frequently negligent in their paces, and must be often reminded: they are very swift and strong, very light, and very fit for hunting. These Horses seem the most proper to breed from; it is only to be wished that they were of larger stature, as they seldom exceed four feet eight inches high."

The Barb.

"The earliest records we have of the Horse, trace him to Egypt, whence he gradually found his way to Arabia and Persia, and the provinces which were colonized from Egypt; and thence to the other parts of the Old World. But Egypt is not now a breeding country, and it does not appear to possess those requisites which could ever have constituted it one. Without, however, entering into the question whether the Horse was primarily the inhabitant of some particular region, whence other parts were gradually supplied, or whether it was common to many countries, but differing in each; we have stated it to be probable that the Horses of Egypt, the earliest on record, were derived from the neighbouring and interior districts of Africa. Therefore, in giving a very summary account of the most celebrated and useful breeds of different countries, it is natural to begin with those of Africa.

"At the head of these is the Barb, from Barbary, and particularly from Morocco and Fez, and the interior of Tripoli, and remarkable for his fine and graceful action. It is rather lower than the Arabian, seldom exceeding fourteen hands and an inch. The shoulders are flat, the chest round, the joints inclined to be long, and the head particularly beautiful. The Barb is decidedly superior to the Arab in form, but has not his spirit, or speed, or countenance.

"The Barb has chiefly contributed to the excellence of the Spanish Horse; and, when the improvement of the breed of Horses began to be systematically pursued in Great Britain, the Barb was very early introduced. The Godolphin Arabian, as he is called, and who was the origin of some of our best racing blood, was a Barb; and others of our most celebrated turf Horses trace their descent from African mares.

"More in the centre of Africa, in the kingdom of Bournou, is a breed which Mr. Tully, in his almost romantic history of Tripoli, reckons superior even to those of Arabia or Barbary; it possesses the best qualities of both those breeds, being as serviceable as that of Arabia, and as beautiful as that of Barbary.

"In the more southern and western districts of Africa, and particularly in the neighbourhood of the Guinea Coast, the breed of Horses is very inferior. They are small, weak, unsafe, and untractable. But neither Horses, nor any other produce of value, can be looked for in those unhappy countries, so long as they are desolated by the infernal slave trade inflicted upon them by the most civilized, but truly unchristian nations of Europe."

The Dongola Horse.

"The kingdom of Dongola, and the neighbouring districts lying between Egypt and Abyssinia, contain a Horse not at all like any other oriental.

"They stand full sixteen hands high, but the length of the body, from the shoulders to the quarter, is considerably less. Their form, therefore, is opposite to that of the

Arabian, or English thorough-bred, which are longer by some inches than they are high. The neck is long and slender, the crest fine, and the withers sharp and high, giving a beautiful forehand; but the breast is too narrow, the quarters and flanks too flat, and the back *carped*.

"Bosman, whose descriptions prove him to be no bad horseman, thus speaks of them, but in somewhat too flattering a manner. 'The Dongola Horses are the most perfect in the world, being beautiful, symmetrical in their parts, nervous and elastic in their movements, and docile and affectionate in their manners. One of these Horses was sold in 1816, at Grand Cairo, for a sum equivalent to 1000*l*.' Going further eastward we arrive at Arabia, whose Horses deservedly occupy the very highest rank."

The Arabian.

"A few wild Horses are yet seen on some of the deserts of Arabia. They are hunted by the Bedouins for their flesh, which is considered a delicacy, if the animal be young; and also to increase their stock of inferior Horses, which they often palm on the merchant as descended from the sacred breed. They are said to be even swifter than the domesticated Horse, and are usually taken by traps hidden in the sand. Mr. Bruce, however, doubts whether any wild Horses are now found in Arabia Deserta.

"Although in the seventh century, the Arabs had no Horses of value, yet the Cappadocian and other Horses which they had derived from their neighbours, were preserved with so much care, and propagated so uniformly and strictly from the finest of the breed, that in the thirteenth century the Arabian Horse began to assume a just and unrivalled celebrity.

"There are said to be three breeds or varieties of Arabian Horses:—the *Attechi*, or inferior breed, on which they set little value, and which are found wild on some parts of the deserts; the *Kadischi*, literally Horses of an unknown race, answering to our half-bred Horses—a mixed breed; and the *Kochlani*, Horses whose genealogy, according to the Arab account, is known for two thousand years. Many of them have written and attested pedigrees extending more than four hundred years, and with true Eastern exaggeration, traced by oral tradition from the stud of Solomon. A more careful account is kept of these genealogies than belongs to the most ancient family of the proudest Arab chief, and very singular precautions are taken to prevent the possibility of fraud, so far as the written pedigree extends.

"The *Kochlani* are principally reared by the Bedouin Arabs, in the remoter deserts. A stallion may be procured without much difficulty, although at a great price. A mare is rarely to be obtained, except by fraud, and excessive bribery. The Arabs have found out that which the English breeder should never forget, that the female is more concerned than the male in the excellence and value of the produce; and the genealogies of their Horses are always reckoned from the mothers.

"The Arabian Horse would not be acknowledged by every judge to possess a perfect form; his head, however, is inimitable. The broadness and squareness of the forehead, the shortness and fineness of the muzzle, the prominence and brilliancy of the eye, the smallness of the ears, and the beautiful course of the veins, will always characterize the head of the Arabian Horse. His body may be considered as too light, and his chest as too narrow; but behind the arms the barrel generally swells out, and leaves sufficient room for the play of the lungs. In the formation of the shoulder, next to that of the head, the Arab is superior to any other breed. The withers are high, and the shoulder-blade inclined backward, and so nicely adjusted, that in descending a hill the point or edge of the ham never ruffles the skin. He may not be thought sufficiently high; he seldom stands more than fourteen hands two inches. The fineness of his legs, and the oblique position of his pasterns, may be supposed to lessen his apparent strength; but the leg, although small, is flat and wiry; anatomists know that the bone has no common density, and the starting muscles of the fore-arm and the thigh, indicate that he is fully capable of accomplishing many of the feats which are recorded of him.

"The Barb alone excels him in noble and spirited action; and if there be defects about him, he is perfect for that for which he was designed. He presents the true combination of speed and bottom—strength enough to carry more than a light weight, and courage that would cause him to die rather than to give up. We may not, perhaps, believe all that is told us of the Arabian. It has been remarked, that there are on the deserts which this Horse traverses, no mile-stones to mark the distance, or watches to calculate the time; and the Bedouin is naturally given to exaggeration, and most of all, when relating the prowess of the animal, which he loves as dearly as his children; yet it cannot be denied that, at the introduction of the Arabian into the European stables, there was no other Horse comparable to him.

"The Arab Horse is as celebrated for his docility and good temper, as he is for speed and courage. In that delightful book, 'Bishop Heber's Narrative of a Journey through the Upper Provinces of India,' the following interesting character is given of him. 'My morning rides are very pleasant. My horse is a nice, quiet, good-tempered little Arab, who is so fearless that he goes, without starting,

close to an elephant, and so gentle and docile that he eats bread out of my hand, and has almost as much attachment and coaxing ways as a dog. This seems the general character of the Arab Horses, to judge from what I have seen in this country. It is not the fiery dashing animal I had supposed, but with more rationality about him, and more apparent confidence in the rider, than the majority of English Horses.'

"The kindness with which he is treated from a foal, gives him an affection for his master, a wish to please, a pride in exerting every energy in obedience to his commands, and, consequently, an apparent sagacity which is seldom seen in other breeds. The mare and her foal inhabit the same tent with the Bedouin and his children. The neck of the mare is often the pillow of the rider, and, more frequently, of the children, who are rolling about upon her and the foal: yet no accident ever occurs, and the animal acquires that friendship and love for man which occasional ill-treatment will not cause him for a moment to forget.

"When the Arab falls from his mare, and is unable to rise, she will immediately stand still and neigh until assistance arrives. If he lies down to sleep, as fatigue sometimes compels him, in the midst of the desert, she stands watchful over him, and neighs and rouses him if either man or beast approaches. An old Arab had a valuable mare that had carried him for fifteen years in many a hard-fought battle, and many a rapid, weary march; at length, eighty years old, and unable longer to ride her, he gave her, and a scimitar that had been his father's, to his eldest son, and told him to appreciate their value, and never lie down to rest until he had rubbed them both as bright as a looking-glass. In the first skirmish in which the young man was engaged, he was killed, and the mare fell into the hands of the enemy. When the news reached the old man, he exclaimed that 'life was no longer worth preserving, for he had lost both his son and his mare, and he grieved for one as much as the other;' and he immediately sickened and died.

"Man, however, is an inconsistent being. The Arab who thus lives with and loves his Horses, regarding them as his most valuable treasure, sometimes treats them with a cruelty scarcely to be believed, and not at all to be justified. The severest treatment which the English Race Horse endures, is gentleness compared with the trial of the young Arabian. Probably the filly has never before been mounted; she is led out; her owner springs on her back, and goads her over the sand and rocks of the desert, at full speed, for fifty or sixty miles, without one moment's respite. She is then forced, steaming and panting, into water deep enough for her to swim. If, immediately after this, she will eat as if nothing had occurred, her character is established, and she is acknowledged to be a genuine descendant of the *Kochlani* breed. The Arab is not conscious of the cruelty which he thus inflicts. It is an invariable custom, and custom will induce us to inflict many a pang on those whom, after all, we love.

"The following anecdote of the attachment of an Arab to his mare, has often been told, but it comes home to the bosom of every one possessed of common feeling:—'The whole stock of an Arab of the desert consisted of a mare. The French consul offered to purchase her in order to send her to his sovereign, Louis XIV. The Arab would have rejected the proposal at once with indignation and scorn; but he was miserably poor. He had no means of supplying his most urgent wants, or procuring the barest necessaries of life. Still he hesitated;—he had scarcely a rag to cover him—and his wife and his children were starving. The sum offered was great,—it would provide him and his family with food for life. At length, and reluctantly, he consented. He brought the mare to the dwelling of the consul,—he dismounted,—he stood leaning upon her;—he looked now at his gold, and then at his favourite; he sighed—he wept. 'To whom is it,' said he, 'I am going to yield thee up? To Europeans, who will tie thee close,—who will beat thee,—who will render thee miserable. Return with me my beauty, my jewel, and rejoice the hearts of my children.' As he pronounced the last words, he sprung upon her back, and was out of sight in a moment.'

"The next anecdote is scarcely less touching, and not so well known. Ibrahim, a poor but worthy Arab, unable to pay a sum of money which he owed, was compelled to allow a merchant of Rama to become partner with him in a valuable mare. When the time came, he could not redeem his pledge to this man, and the mare was sold. Her pedigree could be traced on the side of sire and dam for full five hundred years. The price was three hundred pounds, an enormous sum in that country. Ibrahim went frequently to Rama to inquire after the mare: he would embrace her,—wipe her eyes with his handkerchief,—rub her with his shirt sleeves,—and give her a thousand benedictions during whole hours that he remained talking to her. 'My eyes,' would he say to her, 'my soul! my heart! must I be so unfortunate as to have thee sold to so many masters, and not keep thee myself? I am poor, my antelope! I brought thee up in my dwelling as my child. I did never beat nor chide thee; I caressed thee in the proudest manner. God preserve thee, my beloved! thou art beautiful, thou art sweet, thou art lovely! God defend thee from envious eyes!'

"Sir John Malcolm gives two anecdotes to the same purpose, but of a more amusing nature.

"'When the envoy, returning from his former mission, was encamped near Bagdad, an Arab rode a bright bay mare of extraordinary shape and beauty before his tent, until he attracted his attention. On being asked if he would sell her—'What will you give me?' was the reply. 'That depends upon her age; I suppose she is past five?' 'Guess again,' said he. 'Four?' 'Look at her mouth,' said the Arab, with a smile. On examination, she was found to be rising three. This, from her size and symmetry, greatly enhanced her value. The envoy said, 'I will give you fifty tomans,' (a coin nearly of the value of a pound sterling.) 'A little more, if you please,' said the fellow, apparently entertained. 'Eighty—a hundred.' He shook his head, and smiled. The offer at last came to two hundred tomans. 'Well,' said the Arab, 'you need not tempt me further—it is of no use. You are a rich elchee (nobleman.) You have fine horses, camels, and mules, and, I am told, you have loads of silver and gold. Now,' added he, 'you want my mare, but you shall not have her for all you have got.'

"'An Arab sheick, or chief, who lived within fifty miles of Bussorah, had a favourite breed of Horses. He lost one of his best mares, and could not for a long while discover whether she was stolen, or had strayed. Some time after, a young man of a different tribe, who had long wished to marry his daughter, but had always been rejected by the sheick, obtained the lady's consent, and eloped with her. The sheick and his followers pursued, but the lover and his mistress, mounted on one Horse, made a wonderful march, and escaped. The old chief swore that the fellow was either mounted upon the devil, or the favourite mare he had lost. After his return, he found that the latter was the case; that the lover was the thief of his mare as well as his daughter; and that he stole the one to carry off the other. The chief was quite gratified to think he had not been beaten by a mare of another breed; and was easily reconciled to the young man, in order that he might recover the mare, which appeared an object about which he was more solicitous than about his daughter.'

The enterprising traveller, Major Denham, affords us a pleasing instance of the attachment with which the docility and sagacity of the Horse, may inspire the owner. He thus relates the death of his favourite Arabian, in one of the most desert spots of Central Africa. His feelings needed no apology. We naturally honour the man in whom true sensibility and undaunted courage, exerted for useful purposes, were thus united:—'There are few situations in a man's life in which losses of this nature are felt most keenly; and this was one of them. It was not grief, but it was something very nearly approaching to it; and though I felt ashamed of the degree of derangement I suffered from it, yet it was several days before I could get over the loss. Let it, however, be remembered that the poor animal had been my support and comfort,—nay, I may say, my companion, through many a dreary day and night;—had endured both hunger and thirst in my service; and so docile, that he would stand still for hours in the desert while I slept between his legs, his body affording me the only shelter that could be obtained from the powerful influence of a noon-day sun;—he was yet the fleetest of the fleet, and ever foremost in the chase.'

"Our Horses would fare badly on the scanty nourishment afforded the Arabian. The mare usually has but one or two meals in the twenty-four hours. During the day she is tied to the door of the tent, ready for the Bedouin to spring, at a moment's warning, into the saddle; or she is turned out before the tent ready saddled, the bridle merely taken off, and so trained that she gallops up immediately at her master's call. At night she receives a little water; and with her scanty provender of five or six pounds of barley, or beans, and sometimes a little straw, she lies down content in the midst of her master's family. She can, however, endure great fatigue; she will travel fifty miles without stopping; she has been pushed, on emergency, one hundred and twenty miles; and, occasionally, neither she nor her rider has tasted food for three whole days.

[*To be continued.*]

THE LION.

The most interesting object of a menagerie is probably its Lion; and there are few persons who are not familiar with the general appearance of this most powerful animal. To behold, in perfect security, that creature which is the terror of all travellers in the regions where he abounds; which is said to be able to bear off a buffalo on his back, and crush the skull of a horse by a single stroke of his paw —this is certainly gratifying to a reasonable curiosity. The appearance of dignified self-possession which the Lion displays when at rest; his general indifference to slight provocations; his haughty growl, when he is roused by the importunities of his keepers, or the excitement of the multitude; his impatient roar when he is expecting his daily meal, and his frightful avidity, when he is at length enabled to seize upon his allotted portion;—these are traits of his character in confinement, which are familiar to almost every one.

To comprehend the habits of the Lion, we must not be

satisfied to observe him in menageries; but we must follow with attention the narratives of those travellers who have seen him in his native haunts. From the Cape of Good Hope, for instance, an adventurous naturalist sets forth to explore the immense plains of the interior of Southern Africa. His journey is performed partly on foot, and partly in a wagon drawn by eight or ten oxen. His escort consists of a few sturdy Hottentots, accustomed to the country into which he desires to penetrate—excellent marksmen—and expert in following up the track of every wild or ferocious beast. Further and further he rolls on from the abodes of civilization, and soon finds himself surrounded by tribes of Bushmen, or Caffres, who live in a rude but contented manner, depending for subsistence upon their flocks and upon the chase, and knowing very few of those agricultural arts by which their arid plains might be partially redeemed from sterility. At length he reaches those parts where ferocious animals abound; and where the Lion, particularly, is an object of dread. Having passed the borders of European colonization, his fears are first excited by viewing the footmarks of the Lion. His Hottentot guides have their tales of terror ready for the traveller, who beholds, for the first time, the impress of those tremendous feet upon the sands of the plain which he is to cross; and they are ready to show their skill in tracking, if necessary, the prowling savage to his lair. So nice is this faculty in a Hottentot, of tracking footsteps, that Mr. Barrow tells us he will distinguish the wolf from the domestic dog, by the largeness of the ball of the foot, and the comparative smallness of the toes; and will single out, amongst a thousand, any of his companions' feet. This is an effect of education—an ability produced by the constant exercise of a peculiar faculty, which has been acquired by early training. It is the same ability by which a skilful shepherd is enabled to know every individual sheep belonging to his flock; and its exercise, in each case, proceeds from that habit of attention which enables the human mind to attain excellence in every pursuit. But even a Hottentot does not discover the footsteps of a Lion without fear. Mr. Burchell, with his man Gert, was in search of a party who had killed a hippopotamus. They were hurrying on through a willow-grove, when the Hottentot suddenly stopped, and cried out, with some emotion, "Look here, sir!" Mr. Burchell continues:—"I turned my eyes downwards, and saw the recent footmarks of a Lion, which had been to drink at the river, apparently not more than an hour before. This gave a check to our dialogue on the hippopotamus; and, in a lower and graver tone of voice, he talked now only of Lions, and the danger of being alone in a place so covered with wood." That immediate danger passed away, but new fears of the same nature were constantly presenting themselves. Mr. Barrow says:—"It seems to be a fact well established, that the Lion prefers the flesh of a Hottentot to any other creature;" and the same writer states, in another place, that this powerful and treacherous animal seldom makes an open attack, but, like the rest of the feline genus, lies in ambush, till it can conveniently spring upon its prey. The best security which man and beast have against the attacks of the Lion, is found in his indolence; he requires the strong excitement of hunger to be roused to a pursuit; but when he is roused, his vaunted magnanimity is no protection, even for a sleeping foe, as the poets have pretended.

We must, however, follow our African traveller a little further in his career of observation. A lowering evening comes on; thunder clouds collect in every quarter; and the night becomes extremely dark. The most vivid flashes of lightning are intermingled with the heaviest torrents of rain. The cattle are restless; and the Hottentots are prevented making their evening fire for the cookery of their supper, and for defence against the beasts of prey. On such nights as these the Lion is particularly active. The fury of the elements appears to rouse him from his ordinary torpidity. He advances upon his prey with much less than his usual caution; and he is not at once driven off by the barking of dogs and the sound of muskets. The oxen of the caravan, who appear to scent the distant approach of their terrible enemy, struggle to break loose from their wagons to escape their danger by instant flight—an escape which would prove their destruction. It is only by keeping with man that they are safe. The repeated discharge of fire-arms has the remarkable effect not only of keeping off the Lion, but of abating the restlessness of the cattle. They appear to feel that their enemy will retreat when he hears this demonstration of the powers of the only creature that is enabled, by superior reason, to cope with him. Nights of such harassing watchfulness are frequently experienced by the African traveller.

It is no uncommon thing in the plains of Southern Africa, to encounter innumerable herds of wild animals, quietly grazing like tame cattle. Wherever the quagga, (a species of wild ass,) the sprinkbok, and the hartebeest, (the Dutch names for two varieties of the antelope,) are found, there will be Lions, numerous in proportion, for the destruction of their prey. Of course, those formidable beasts can only exist where the means of their support are to be procured. They are destined to live on animal food: and, therefore, where there are flocks and herds, whether in a wild or a domestic state, there they will be also. Mr. Campbell states that the quagga migrates in winter from the tropics to the vicinity of the Malaleveen river; which, though farther to the south, is reported to be considerably

warmer than within the tropics, when the sun has retired to the northern hemisphere. He saw bands of two or three hundred quaggas, all travelling southward. They are followed by Lions, who slaughter them night by night; and what the Lions leave of the carcases of these unfortunate animals, is devoured by the vultures and the Bushmen. Even the buffalo, whose forehead, when he is of mature age, is completely covered with a rugged mass of horn as hard as a rock, the fibres of whose muscles are like so many bundles of cords, and whose hide is little inferior in strength and thickness to that of the rhinoceros—even he is not safe from the attacks of the Lion. "He lies waiting for him in ambush till a convenient opportunity offers for springing upon the buffalo, and fixing his fangs in his throat; then sticking his paw into the animal's face, he twists round the head, and pins him to the ground by the horns, holding him in that situation till he expires from loss of blood."

It has been often stated by Mr. Pringle, upon the authority of a chief of the Bechuanas, that the Lion, after he has made his fatal spring upon the giraffe, when he comes to drink at the pools, is carried away for miles, fixed on the neck of that fleet and powerful creature, before his victim sinks under him.

To the traveller in Africa, the Lion is formidable, not at night only; he lies in his path, and is with difficulty disturbed to allow a passage for his wagons and cattle, even when the sun is shining with its utmost brilliancy: or he is roused from some bushy place on the road-side, by the indefatigable dogs which always accompany a caravan. Mr. Burchell has described, with great spirit, an encounter of this nature:—

"The day was exceedingly pleasant, and not a cloud was to be seen. For a mile or two we travelled along the banks of the river, which in this part abounded in tall mat-rushes. The dogs seemed much to enjoy prowling about and examining every bushy place, and at last met with some object among the rushes which caused them to set up a most vehement and determined barking. We explored the spot with caution, as we suspected, from the peculiar tone of their bark, that it was what it proved to be, Lions. Having encouraged the dogs to drive them out, a task which they performed with great willingness, we had a full view of an enormous black-maned Lion and a Lioness. The latter was seen only for a minute, as she made her escape up the river, under concealment of the rushes; but *the Lion* came steadily forward, and stood still to look at us. At this moment, we felt our situation not free from danger, as the animal seemed preparing to spring upon us, and we were standing on the bank at the distance of only a few yards from him, most of us being on foot, and unarmed, without any visible possibility of escaping. I had given up my horse to the hunters, and was on foot myself; but there was no time for fear, and it was useless to attempt avoiding him. I stood well upon my guard, holding my pistols in my hand, with my finger upon the trigger,—and those who had muskets kept themselves prepared in the same manner. But at this instant, the dogs boldly flew in between us and the Lion, and surrounding him, kept him at bay, by their violent and resolute barking. The courage of these faithful animals was most admirable; they advanced up to the side of the huge beast, and stood making the greatest clamour in his face, without the least appearance of fear. The Lion, conscious of his strength, remained unmoved at their noisy attempts, and kept his head turned towards us. At one moment, the dogs perceiving his eyes thus engaged, had advanced close to his feet, and seemed as if they would actually seize hold of him; but they paid dearly for their imprudence, for, without discomposing the majestic and steady attitude in which he stood fixed, he merely moved his paw, and at the next instant I beheld two lying dead. In doing this, he made so little exertion that it was scarcely perceptible by what means they had been killed. Of the time which we had gained by the interference of the dogs, not a moment was lost; we fired upon him; one of the balls went through his side just between the short ribs, and the blood immediately began to flow, but the animal still remained standing in the same position. We had now no doubt that he would spring upon us; every gun was instantly reloaded; but happily we were mistaken, and were not sorry to see him move quietly away; though I had hoped in a few minutes to have been enabled to take hold of his paw without danger.

"This was considered by our party to be a Lion of the largest size, and seemed, as I measured him by comparison with the dogs, to be, though less bulky, as large as an ox. He was certainly as long in body, though lower in stature; and his copious mane gave him a truly formidable appearance. He was of that variety which the Hottentots and boors distinguish by the name of the *black Lion*, on account of the blacker colour of the mane, and which is said to be always larger and more dangerous than the other, which they call the *pale Lion*, (vaal leeuw.) Of the courage of the Lion I have no very high opinion; but of his majestic air and movements, as exhibited by this animal, while at liberty in his native plains, I can bear testimony. Notwithstanding the pain of a wound, of which he must soon afterwards have died, he moved slowly away with a stately and measured step.

"At the time when men first adopted the Lion as the emblem of courage, it would seem that they regarded great

size and strength as indicating it; but they were greatly mistaken in the character they have given to this indolent, skulking animal, and have overlooked a much better example of true courage, and of other virtues also, in the bold and faithful dog."

[*To be continued.*]

CANVAS-BACK DUCK.

ANAS VALISINERIA.

[Plate IV. Vol. 2.]

Collection of S. P. Griffitts, *Esq.*

This celebrated American species, as far as can be judged from the best figures and descriptions of foreign birds, is altogether unknown in Europe. It approaches nearest to the Pochard of England, *Anas ferina*, but differs from that bird in being superior in size and weight, in the greater magnitude of its bill, and the general whiteness of its plumage. A short comparison of the two will elucidate this point. The Canvas-back measures two feet in length, by three feet in extent, and when in the best order weighs three pounds and upwards. The Pochard, according to Latham and Bewick, measures nineteen inches in length, and thirty in extent, and weighs one pound twelve or thirteen ounces. The latter writer says of the Pochard, "the plumage above and below is wholly covered with prettily freckled slender dusky threads, disposed transversely in close set zig-zag lines, on a pale ground, more or less shaded off with ash;" a description much more applicable to the bird figured beside it, the *Red Head*, and which very probably is the species meant. In the figure of the Pochard given by Mr. Bewick, who is generally correct, the bill agrees very well with that of our Red Head, but is scarcely half the size and thickness of that of the Canvas-back; and the figure in the *Planches Enluminees* corresponds in that respect with Bewick's. In short, either these writers are egregiously erroneous in their figures and descriptions, or the present Duck was altogether unknown to them. Considering the latter supposition the more probable of the two, I have designated this as a new species, and shall proceed to detail some particulars of its history.

The Canvas-back Duck arrives in the United States from the north about the middle of October; a few descend to the Hudson and Delaware, but the great body of these birds resort to the numerous rivers belonging to and in the neighbourhood of the Chesapeake Bay, particularly the Susquehanna, the Patapsco, Potomac, and James' Rivers, which appear to be their general winter rendezvous. Beyond this, to the south, I can find no certain accounts of them. At the Susquehanna they are called *Canvas-backs*, on the Potomac, *White-backs*, and on James' River, *Sheldrakes*. They are seldom found at a great distance up any of these rivers, or even in the salt water bay; but in that particular part of tide water where a certain grass-like plant grows, on the roots of which they feed. This plant, which is said to be a species of *Valisineria*, grows on fresh water shoals of from seven to nine feet, (but never where they are occasionally dry,) in long narrow grass-like blades of four or five feet in length; the root is white, and has some resemblance to small celery. This grass is in many places so thick that a boat can with difficulty be rowed through it, it so impedes the oars. The shores are lined with large quantities of it torn up by the Ducks, and drifted up by the winds, lying like hay in wind rows. Wherever this plant grows in abundance the Canvas-backs may be expected, either to pay occasional visits, or to make it their regular residence during the winter. It occurs in some parts of the Hudson; in the Delaware, near Gloucester, a few miles below Philadelphia; and in most of the rivers that fall into the Chesapeake, to each of which particular places these Ducks resort; while in waters unprovided with this nutritive plant they are altogether unknown.

On the first arrival of these birds in the Susquehanna, near Havre-de-grace, they are generally lean; but such is the abundance of their favourite food, that towards the beginning of November they are in pretty good order. They are excellent divers, and swim with great speed and agility. They sometimes assemble in such multitudes as to cover several acres of the river, and when they rise suddenly, produce a noise resembling thunder. They float about these shoals, diving and tearing up the grass by the roots, which is the only part they eat. They are extremely shy, and can rarely be approached unless by stratagem. When wounded in the wing, they dive to such prodigious distances, and with such rapidity, continuing it so perseveringly, and with such cunning and active vigour, as almost always to render the pursuit hopeless. From the great demand for these Ducks, and the high price they uniformly bring in market, various modes are practised to get within gunshot of them. The most successful way is said to be, decoying them to the shore by means of a dog, while the gunner lies closely concealed in a proper situation. The dog, if properly trained, plays backwards and forwards along the margin of the water, and the Ducks observing his manœuvres, enticed perhaps by curiosity, gradually

CANVAS-BACK DUCK.

RED-HEADED DUCK.

approach the shore, until they are sometimes within twenty or thirty yards of the spot where the gunner lies concealed, and from which he rakes them, first on the water, and then as they rise. This method is called *tolling them in.* If the Ducks seem difficult to decoy, any glaring object, such as a red handkerchief, is fixed round the dog's middle, or to his tail, and this rarely fails to attract them. Sometimes, by moonlight, the sportsman directs his skiff towards a flock, whose position he had previously ascertained, keeping within the projecting shadow of some wood, bank, or headland, and paddles along so silently and imperceptibly, as often to approach within fifteen or twenty yards of a flock of many thousands, among whom he generally makes great slaughter.

Many other stratagems are practised, and indeed every plan that the ingenuity of the experienced sportsman can suggest, to approach within gunshot of these birds; but of all the modes pursued, none intimidate them so much as shooting them by night; and they soon abandon the place where they have been thus repeatedly shot at. During the day they are dispersed about; but towards evening collect in large flocks, and come into the mouths of creeks, where they often ride as at anchor, with their head under their wing, asleep, there being always sentinels awake, ready to raise an alarm on the least appearance of danger. Even when feeding and diving in small parties, the whole never go down at one time, but some are still left above on the look-out.

When the winter sets in severely, and the river is frozen, the Canvas-backs retreat to its confluence with the bay, occasionally frequenting air-holes in the ice, which are sometimes made for the purpose, immediately above their favourite grass, to entice them within gunshot of the hut or bush which is usually fixed at a proper distance, and where the gunner lies concealed ready to take advantage of their distress. A Mr. Hill, who lives near James' River, at a place called Herring Creek, informs me, that one severe winter he and another person broke a hole in the ice about twenty by forty feet, immediately over a shoal of grass, and took their stand on the shore, in a hut or bush, each having three guns well loaded with large shot. The Ducks, which were flying up and down the river in great extremity, soon crowded to this place, so that the whole open space was not only covered with them, but vast numbers stood on the ice around it. They had three rounds, firing both at once, and picked up eighty-eight Canvas-backs, and might have collected more had they been able to get to the extremity of the ice after the wounded ones. In the severe winter of 1779–80, the grass, on the roots of which these birds feed, was almost wholly destroyed in James' River. In the month of January the wind continued to blow from W. N. W. for twenty-one days, which caused such low tides in the river that the grass froze to the ice every where, and a thaw coming on suddenly, the whole was raised by the roots, and carried off by the fresh. The next winter a few of these Ducks were seen, but they soon went away again; and for many years after, they continued to be scarce; and even to the present day, in the opinion of my informant, have never been so plenty as before.

The Canvas-back, in the rich juicy tenderness of its flesh, and its delicacy and flavour, stands unrivalled by the whole of its tribe, in this or perhaps any other quarter of the world. Those killed in the waters of the Chesapeake are generally esteemed superior to all others, doubtless from the great abundance of their favourite food which these rivers produce. At our public dinners, hotels, and particular entertainments, the Canvas-backs are universal favourites. They not only grace but dignify the table, and their very name conveys to the imagination of the eager epicure, the most comfortable and exhilarating ideas. Hence on such occasions, it has not been uncommon to pay from one to three dollars a pair for these Ducks; and, indeed, at such times, if they can they must be had, whatever may be the price.

The Canvas-back will feed readily on grain, especially wheat, and may be decoyed to particular places by baiting them with that grain for several successive days. Some few years since, a vessel loaded with wheat, was wrecked near the entrance of Great Egg-Harbour, in the autumn, and went to pieces. The wheat floated out in vast quantities, and the whole surface of the bay was in a few days covered with Ducks of a kind altogether unknown to the people of that quarter. The gunners of the neighbourhood collected in boats in every direction, shooting them; and so successful were they, that, as Mr. Beasley informs me, two hundred and forty were killed in one day, and sold among the neighbours, at twelve and a half cents a piece, without the feathers. The wounded ones were generally abandoned, as being too difficult to be come up with. They continued about three weeks, and during the greater part of that time a continual cannonading was heard from every quarter. The gunners called them *Sea Ducks.* They were all *Canvas-backs*, at that time on their way from the north, when this floating feast attracted their attention, and for awhile arrested them in their course. A pair of these very Ducks I myself bought in Philadelphia market at the time, from an Egg-Harbour gunner, and never met with their superior either in weight or excellence of flesh. When it was known among those people the loss they had sustained in selling for twenty-five cents what would have brought them from a dollar to a dollar

and a half per pair, universal surprise and regret were naturally enough excited.

The Canvas-back is two feet long, and three feet in extent, and when in good order weighs three pounds; the bill is large, rising high in the head, three inches in length, and one inch and three-eighths thick at the base, of a glossy black; eye very small; irides dark red; cheeks, and fore part of the head, blackish brown; rest of the head, and greater part of the neck, bright glossy reddish chesnut, ending in a broad space of black that covers the upper part of the breast, and spreads round to the back; back, scapulars and tertials, white, faintly marked with an infinite number of transverse waving lines, or points, as if done with a pencil; whole lower parts of the breast, also the belly, white, slightly pencilled in the same manner, scarcely perceptible on the breast, pretty thick towards the vent; wing coverts gray, with numerous specks of blackish; primaries and secondaries, pale slate, two or three of the latter of which nearest the body, are finely edged with deep velvetty black, the former dusky at the tips; tail very short, pointed, consisting of fourteen feathers of a hoary brown; vent and tail coverts, black; lining of the wing, white; legs and feet, very pale ash, the latter three inches in width, a circumstance which partly accounts for its great powers of swimming.

The female is somewhat less than the male, and weighs two pounds and three-quarters; the crown is blackish-brown; cheeks and throat of a pale drab; neck, dull brown; breast, as far as the black extends on the male, dull brown, skirted in places with pale drab; back, dusty white, crossed with fine waving lines; belly, of the same dull white, pencilled like the back: wings, feet, and bill, as in the male; tail coverts dusky, vent white waved with brown.

The windpipe of the male has a large flattish concave labyrinth, the ridge of which is covered with a thin transparent membrane; where the trachea enters this it is very narrow, but immediately above swells to three times that diameter. The intestines are wide, and measure five feet in length.

Note.—It is a circumstance calculated to excite our surprise, that the Canvas-back, one of the commonest species of our country,—a Duck which frequents the waters of the Chesapeake in flocks of countless thousands, should yet have been either overlooked by the naturalists of Europe, or confounded with the Pochard, a species whose characters are so obviously different. But that this is the fact, I feel well assured, since I have carefully examined every author of repute to which I have had access, and have not been enabled to find any description which will correspond to the subject before us. The species, then, we hope, will stand as Wilson's own; and it is no small addition to the fame of the American Ornithology, that it contains the first scientific account of the finest Duck that any country can boast of.

The Canvas-back Ducks frequent the Delaware in considerable numbers. The *Valisineria* grows pretty abundantly in various places, from Burlington, New-Jersey, to Eagle Point, a few miles below Philadelphia. Wherever this plant is found, there will the Ducks be; and they will frequently venture within reach of their enemies' weapons rather than abstain from the gratification of their appetite for this delicious food. The shooters in the neighbourhood of Philadelphia for many years were in the habit of supplying our markets with this species, which always bore the name of Red-heads, or Red-necks; and their ignorance of its being the true Canvas-back was cunningly fostered by our neighbours of the Chesapeake, who boldly asserted that only their waters were favoured with this species, and that all other Ducks, which seemed to claim affinity, were a spurious race, unworthy of consanguinity. Hence at the same time when a pair of legitimate Canvas-backs, proudly exhibited from the mail-coach, from Havre-de-Grace, readily sold for two dollars and fifty cents, a pair of the identical species, as fat, as heavy, as delicious, but which had been unfortunately killed in the Delaware, brought only one dollar; and the lucky shooter thought himself sufficiently rewarded in obtaining twenty-five per cent. more for his *Red-necks*, than he could obtain for a pair of the finest Mallards that our waters could afford. But the delusion is now passed; every shooter and huckster knows the distinctive characters of the Canvas-back and the Red-head; and prejudice no longer controverts the opinion that this species is a common inhabitant of the Delaware; and epicures are compelled to confess that they can discern no difference between our Canvas-back, when in season, and that from Spesutie, or Carrol's Island, the notorious shooting ground of the *bon-vivants* of Baltimore.

The last mentioned place, though commonly termed an island, is properly a peninsula, situated on the western side of the Chesapeake Bay, a few miles from Baltimore. It is a spot highly favourable for the shooting of water fowl. It extends for a considerable distance into the bay; and, being connected with the main land by a narrow neck, the shooters are enabled to post themselves advantageously on the isthmus; and intercept the fowl, who, in roving from one feeding ground to another, commonly prefer crossing the land to taking a long flight around the peninsula. In calm weather the shooters have not much luck, the Ducks keeping out in the coves, and, when they do move, flying high; but should a fresh breeze prevail, especially one from the eastward, rare sport may be anticipated; and it is no unusual

circumstance for a party of four or five gentlemen returning home, after a couple of days' excursion, with fifty or sixty Canvas-backs, besides some other Ducks of inferior note. The greatest flight of Ducks commonly takes place between daybreak and sunrise, and, while it lasts, the roaring of the fowling-pieces, the bustle of the sportsmen, the fluttering of the fowl, and the plunging of the dogs, constitute a scene productive of intense interest. The dog in most esteem for this amusement is a large breed, partaking of the qualities of the Newfoundland variety. They trust altogether to their sight, and it is astonishing what sagacity they will manifest in watching a flock of Ducks that had been shot at, and marking the birds that drop into the water, even at a considerable distance off. When at fault, the motion of their master's hand is readily obeyed by them; and when unable to perceive the object of their search, they will raise themselves in the water for this purpose, and will not abandon the pursuit while a chance remains of succeeding. A generous, well-trained dog, has been known to follow a Duck for more than half a mile; and, after having been long beyond the reach of seeing or hearing his master, to return, puffing and snorting under his load, which seemed sufficient to drag him beneath the waves. The Editor having been an eye-witness of similar feats of these noble animals, can therefore speak with confidence as to the fact.

On the Delaware but few of this species, comparatively, are obtained, for the want of proper situations whence they may be shot on the wing. To attempt to approach them, in open day, with a boat, is unproductive labour, except there be floating ice in the river, at which time, if the shooter clothe himself in white, and paint his skiff of the same colour, he may so deceive the Ducks as to get within a few feet of them. At such times it is reasonable to suppose that these valuable birds get no quarter. But there is one caution to be observed, which experienced sportsmen never omit: it is to go always *with* the current; a Duck being sagacious enough to know that a lump of ice seldom advances *against* the stream. They are often shot, with us, by moonlight, in the mode related in the foregoing account; the first pair the Editor ever killed, was in this manner; he was then a boy, and was not a little gratified with his uncommon acquisition.

As the *Valisineria*, will grow in all our fresh water rivers, in coves, or places not affected by the current, it would be worth the experiment to transplant this vegetable in those waters where it at present is unknown. There is little doubt the Canvas-backs would, by this means, be attracted; and thus would afford the lovers of good eating an opportunity of tasting a delicacy, which in the opinion of many, is unrivalled by the whole feathered race.

In the spring, when the Duck-grass becomes scarce, the Canvas-backs are compelled to subsist upon other food, particularly shell-fish; their flesh then loses its delicacy of flavour, and although still fat, it is not esteemed by epicures; hence the Ducks are not much sought after; and are permitted quietly to feed until their departure for the north.

Our author states that he had had no certain accounts of this species to the southward of James' River, Virginia. In the month of January, 1818, I saw many hundreds of these Ducks feeding in the Savannah River, not far from Tybee light-house. They were known by the name of Canvas-backs; but the inhabitants of that quarter considered them as fishing Ducks, not fit to be eaten: so said the pilot of the ship which bore me to Savannah. But a pair of these birds having been served up at table, after my arrival, I was convinced, by their delicate flavour, that they had lost little by their change of residence, but still maintained their superiority over all the water fowl of that region. In the river St. John, in East Florida, I also saw a few scattered individuals of this species; but they were too shy to be approached within gunshot.

The Canvas-backs swim very low, especially when fat; and when pursued by a boat, they stretch themselves out in lines in the manner of the Scaup Ducks, so that some of the flock are always enabled to reconnoitre the paddler, and give information to the rest, of his motions. When the look-out Ducks apprehend danger, the stretching up of their necks is the signal, and immediately the whole squadron, facing to the wind, rise with a noise which may be heard at the distance of half a mile.

The guns employed in Canvas-back shooting should be of a medium length and caliber; and of the most approved patent breech. My experience has taught me that a barrel of three feet seven inches, with a bore short of seven-eighths of an inch, is quite as effective as one of greater dimensions, and is certainly more convenient. It may appear a work of supererogation to speak of the quality of powder to be used in this kind of sporting; and yet so often are shooters deceived in this article, either through penuriousness or negligence, that a word of advice may not be unprofitable. One should obtain the best powder, without regard to price; it being an indispensable maxim in shooting, but which is too often forgotten, that the best is always the cheapest.—*Wilson's Ornithology.*

[As the Red-headed Duck is so frequently imposed on purchasers for the Canvas-back, from the Philadelphia and other markets, we have thought it advisable to introduce both birds in the same Plate, (vide Plate IV. Vol. 2,) when it will be seen, that the distinguishing marks are chiefly confined to the bill, eyes, head, and size of the birds; the Red-head being the smallest bird, and having a brighter red over the whole head.—Ed.]

RED-HEADED DUCK.

ANAS FERINA.

[Plate IV. Vol. 2.]

Anas Ferina, Gmel. i. p. 530, No. 31.—*Anas rufa*, *Id.* p. 515.—*Ind. Orn.* p. 862, No. 77; p. 863, No. 78.—*Rufous necked-Duck*, *Gen. Syn.* iii. p. 477, No. 32.—*Pochard*, *Id.* p. 523, No. 68.—*Red-headed Duck*, Lawson's *Carolina*, p. 150.—Bewick ii. p. 320.—*Arct. Zool.* No. 491. *Br. Zool.* No. 284.—*Le Millouin*, Briss. vi. p. 384, No. 19, pl. 35. *fig.* 1; *Le Millouin nois*, *Id.* p. 389, *A. young male? Le Millouin du Mexique*, *Id.* p. 390, No. 20, *female*, Buff. ix. p. 216. *Pl. Enl.* 803.—Temm. *Man. d'Orn.* p. 669.—Willoughby, p. 367, § xi.—Montagu, *Orn. Dict.*—Philadelphia Museum.

This is a common associate of the Canvas-back, frequenting the same places, and feeding on the *stems* of the same grass, the latter eating only the *roots;* its flesh is very little inferior, and it is often sold in our markets for the Canvas-back, to those unacquainted with the characteristic marks of each. Anxious as I am to determine precisely whether this species be the Red-headed Wigeon, Pochard, or Dun bird of England, I have not been able to ascertain the point to my own satisfaction; though I think it very probably the same, the size, extent, and general description of the Pochard agreeing pretty nearly with this.

The Red-head is twenty inches in length, and two feet six inches in extent; bill, dark slate, sometimes black, two inches long, and seven-eighths of an inch thick at the base, furnished with a large broad nail at the extremity; irides, flame-coloured; plumage of the head long, velvetty, and inflated, running high above the base of the bill; head, and about two inches of the neck, deep glossy reddish chesnut; rest of the neck and upper part of the breast black, spreading round to the back; belly white, becoming dusky towards the vent by closely marked undulating lines of black; back and scapulars, bluish white, rendered gray by numerous transverse waving lines of black; lesser wing coverts, brownish ash; wing quills, very pale slate, dusky at the tips; lower part of the back, and sides under the wings, brownish black, crossed with regular zig-zag lines of whitish; vent, rump, tail, and tail coverts, black; legs and feet, dark ash.

The female has the upper part of the head dusky brown, rest of the head and part of the neck, a light sooty brown; upper part of the breast, ashy brown, broadly skirted with whitish; back, dark ash, with little or no appearance of white pencilling; wings, bill, and feet, nearly alike in both sexes.

This Duck is sometimes met with in the rivers of North and South Carolina, and also in those of Jersey and New-York; but always in fresh water, and usually at no great distance from the sea. Is most numerous in the waters of the Chesapeake, and with the connoisseurs in good eating, ranks next in excellence to the Canvas-back. Its usual weight is about a pound and three-quarters, avoirdupois.

The Red-head leaves the bay and its tributary streams in March, and is not seen until late in October.

The male of this species has a large flat bony labyrinth on the bottom of the windpipe, very much like that of the Canvas-back, but smaller; over one of its concave sides is spread an exceeding thin transparent skin, or membrane. The intestines are of great width, and measure six feet in length.—*Ib.*

From the New-England Galaxy.

SOME PASSAGES FROM THE DIARY OF A SPORTSMAN.

[Continued from page 21.]

It is impossible that the Sportsman should be other than an admirer of nature. In all his solitary rambles, whether upon the wild and lonely hill-side, or in the heart of the pastoral valley; at the edge of the mirror-like lake, or along the borders of the mountain brook,—his eye is always filled with beautiful and picturesque objects. His ear soon becomes familiar with the light carol of every bird which inhabits the thicket or the forest; and his eye is soon made acquainted with the whole lovely family of flowers, which enamel the earth, and enrich the air with their wind-scattered perfume. There is not a wild flower that nods to him from the top of the verdant bank, or the vine-covered precipice, or a bird that salutes him with its voluble overture from its leafy dome, that he cannot recognize and call by name. The speckled turtle, that plunges from its black fortress into the pool, at the sound of his approaching step, or the glittering snake, which hastens to conceal itself beneath its bush, at his coming, are not unnoticed by him. He has an eye open to the observance of all rural objects, and an ear awake to the hearing of all woodland sounds.

One of our most favourite places for ramble and sport, has been Mount Holyoke, the most romantic link in that chain of hills, which Nature has stretched along the western borders of this state. At its base rolls the broad and fertilizing Connecticut. Behind it, hills after hills, like successive ranks of an advancing host, lift up their vapoury

summits, covered with verdure, and bristling with the sharp spires of a thousand forests. Many a time have I stood, surrounded by the mists and shadows that repose or tumble around its summit, to behold the bright coming of the dawn, or to admire the gradual departure of the twilight, from its loftiest peak, "the last to parley with the setting sun." Poets have always delighted to select the decaying glory of twilight, or the sober grandeur of evening, as the themes for their song,—but it seems to me, that they would find a far nobler theme for their verse, in the first grey breaking of the dawn, and its first rosy flush upon the mists and shadows that cover up the hills, as with a garment. The most unromantic mind could not contemplate such a scene with indifference. The spectator seems, as it were, to be surrounded with an illimitable sea of vapour, whose white surges perpetually boil and heave around him. If I look into the dome above me, my eye cannot penetrate the thick curtain of gloom that hangs around it; if I cast my eye into the abyss around and beneath, I cannot discern an object on the bosom of the green earth below, for "shadows, clouds, and darkness rest upon it."

——"At once that sea of vapour
Parted away, and melting into air
Rose round me, and I stood involved in light;
As if a flame had kindled up, and wrapped me
In its innocuous blaze. Away it rolled
Wave after wave. Then climbed the highest rocks,
Poured over them in surges, and then rushed
Down glens and valleys, like a wintry torrent
Dashed instant to the plain. It seemed a moment,
And they were gone, as if the touch of fire
At once dissolved them. Then I found myself
Midway in air;—ridge after ridge below,
Descended with their opulence of woods,
Even to the dim-seen level, where a lake
Flashed in the sun, and from it wound a line,
Now silvery bright even to the farthest verge
Of the encircling hills. A waste of rocks
Was round me—but below how beautiful!
How rich the plain! a wilderness of groves,
And ripening harvests; while the sky of June—
The soft blue of June, and the cool air,
That makes it then a luxury to live
Only to breathe it, and the busy echo
Of cascades, and the voice of mountain-brooks,
Stole with such gentle meanings to my heart,
That where I stood seemed heaven."

The verdure of the earth is then lost and mingled in a thousand varied colours, made up of all the rich combinations of the rainbow. The sky itself then seems to lose its rich, deep azure, and the smoky vapours that then ascend its dome, and repose in its serene chamber, seem to have caught the variegated hues of the earth itself. Every mountain turn and lonely pool, every brimming river and subsidiary stream, is then richly tinged with a myriad of wavy hues, caught from the reflected woods, or the overhanging clouds. In the very depths of the woods the pine and fir, and a few other evergreens, may still retain their verdant tinge, the wild grape-vines also, which are among the last to perish, may preserve their pure and lovely greenness, but every where else the eye is dazzled with the gaudiest combinations, of azure, purple, crimson, scarlet, yellow, orange, and gold. All these rich varieties of colour, renders the wide drapery of the woods, inexpressibly lovely, whether it is shaken and tossed about by the clear mountain breeze, or remains utterly motionless in the profound silence; so profound that nothing is audible, save, perhaps,

The sound of nutshells, by the squirrel dropped
From some tall beech, fast falling through the leaves.

I was once, I remember, rambling alone on those hills, on a beautiful day in that period of the year, when the foliage, having attained the perfection of its colouring, and dropping in clouds from the trees, seemed to repeat that monitory lesson, which Autumn has been so poetically represented as conveying. Nothing can exceed the glory of our native woods at the autumnal period, when the forest casts the leaf, and

When the sound of dropping nuts is heard
Though all the trees are still;
And twinkle in the smoky light
The waters of the rill.

I had been rambling the whole day, with my gun, upon that mountain, so celebrated for gray squirrels, wild turkeys, rattlesnakes, and various kind of game, and being fatigued with scaling precipices and straggling through almost impervious thickets, was about returning, when chance threw in my way a very eccentric, and at the same time agreeable companion. He was a stout woodsman, who had been employed like myself, in the pursuit of game, but with a very different weapon. Like the hardy pioneers of the West, he used the rifle only in his sports, disdaining to employ the ordinary weapon in common use with New-England Sportsmen. He had killed nothing but gray squirrels, but of these he had destroyed a great number. Each animal bore the mark of a single ball, and many of them were pierced directly through the head. He assured me that he rarely failed of despatching his victim, though perched on the loftiest limb of the forest. This feat is the more surprising, when we consider how closely the animal adheres to the body of the tree, whenever alarmed, and by this sagacious act protects itself from observation, and offers but a very uncertain mark to its pursuers.

I subsequently saw this man at certain "turkey shootings," and was still more struck with the astonishing accu-

racy of his aim. In fact, it was not unusual for the owners of the poor birds, which were inhumanly "set up" on such occasions, to bribe him to take no share in the sports. If he did persist in claiming his privilege, the six-cents premium paid for the chance, was but a poor recompense to the owner for the loss of his bird. "Old Natty Bumpo," for so he was called by his brother shooters, was in the habit of posting away to take a part in great turkey-matches, in remote villages, where he was unknown, from which he always returned, with a large proportion of the plunder. I was told that he at one time hired his wagon, rode twenty miles, and returned the same day, having killed forty out of fifty of the birds. His booty amply paid him for his trouble and expense, in addition to the gratification of gaining so complete a triumph over the "*strangers.*" He was in the practice of wandering about, alone, in the extensive meadows in the valley of the Connecticut, and wo betide the beast or bird that ventured within the range of his rifle. He at one time, in the course of his rambles in these plains, discovered an eagle sitting upon a large and solitary oak, apparently regardless of his approach. He fired at him from a great distance, fearing that he should be unable to approach without giving alarm, and fortunately wounded him. The eagle lost his balance, but still held, however, his grasp upon the branch upon which he had rested. Our rifleman fired again, cut off the twig which he clung to, and secured his prisoner.

It was of such hardy and skilful men that our armies of the Revolution were composed; and to their accuracy of eye, and firmness of nerve, we may attribute the repeated successes of undisciplined men, over the practised veterans of Europe. If General Hull, during the North-Western Campaign of the last war, had been followed to the field by a body of such men, bearing any fair proportion to the army of Brock, he would have added new lustre to the reputation he had gained under Washington, in nearly every battle of the Revolution, and escaped those vile imputations upon his honour and courage, which his enemies, and those by whom he had been wronged, endeavoured to cast upon him. Posterity, however, will see this affair through the medium of historical truth, and will render to his memory a deserved though tardy tribute. M.

INSTRUCTIONS TO YOUNG SPORTSMEN.

No. I.

THE first important step towards becoming an expert Sportsman, is a perfect knowledge of the gun. This is the rudiment of the science, and is of more importance than most young men are aware, who are about to enter into the enjoyments of the field. To obtain this knowledge, much patience and experience are required; and certain rules observed by the learner, from which he ought not to depart. In the hands of the careless and inexperienced, the gun often proves an instrument of death to a companion, and his future days become embittered by the carelessness of a moment, which might have been avoided, had that attention been paid to the subject which it certainly demands. Wherefore, I hold it as an infallible rule, that none should ever venture in search of game with a gun, especially beside his companions, until familiarity with it at home, has made him a master of his gun. I shall advance a few rules on this head, founded on my own observation and the experience of others, which perhaps may assist the young beginner in the science.

So much has been said about the "choice of guns," that any thing advanced here on that point might be considered superfluous; but when we reflect on the number of accidents which have occurred through the medium of inferior guns, and how much it is recommended that "any kind of gun" will answer to learn with,—that I cannot help joining other writers, and exclaim against all inferior or low priced guns. I most strenuously recommend the young Sportsman to beware of common English, French, and Dutch guns. A medium or high price English gun is the cheapest in the end for a gentleman who intends using it during the successive seasons of shooting, and would recommend him to pay a price not less than fifty dollars, as very few lower priced than this can be depended on. The best, and most popular description of guns, are the stub and twist double guns, of 11-16ths of an inch calibre, and thirty inches in length, with back action locks, and steel works; steel furniture without scroll guards; spring-box triggers; a plain stock, chequered only at the breech, and the grain of the wood running parallel with the bend. Do not choose a gun for its beautiful stock, as that description seldom proves serviceable, but will break with very trifling usage. Let the stock be rather straight, and long from the trigger to the butt, in order to enable you to keep your head elevated.

A gun of the above cast can be purchased now for sixty to seventy-five dollars,—should you pay less than this for a new gun, in a regalar gun store, you cannot depend on its being a stub and twist. Very showy guns have been selling at prices, varying from thirty-five to fifty dollars, but be assured they are only twisted iron; and have not steel works in their locks, but case-hardened iron, which is almost as brittle as glass, and the furniture is either of cast iron, or of the most inferior quality.

A gun of the former kind may be used constantly for eight or ten years, or until the owner becomes an expert

shot, when, if his means will warrant, he can purchase a higher price, or first rate London gun.

I have two guns, one of which is of Birmingham manufacture, and the other from London; the former was invoiced at £18.10, and cost me ninety dollars,—the latter had seen many years of service before it came into my possession, and I was assured it originally cost forty guineas. This gun, although upwards of twenty years old, is substantial and perfect in its parts, and performs as well as when it came into my possession, eight years since; and I have no doubt that with care and constant use, it will last for half a century to come; while the other gun has seen but seven years' service altogether, and is deficient, more or less, in all its parts. I do not mean by this to say, that a young beginner should be so extravagant as to pay two hundred dollars for a gun, but it is only to contrast the two kinds of guns, and the superiority of the manufacture, and the duration of the one over the other, which augments its price, and endeavour to reconcile a difficulty which arises in the minds of many persons, who frequently ask the question, "What makes one gun cost so much more than another"—and, "What advantage is to be derived from such difference in price."

The young Sportsman having now provided himself with a gun, he should learn to handle it expertly, and with grace. I delight to see a man do this;—it proves him worthy of the instrument, and that he has given proper care and attention to the leading principles of shooting. What is more unsightly than a Sportsman to use his gun as though it was an uncouth stick of wood?—to see him bring it to his shoulder so clumsily, as to catch it either in his accoutrements, or the butt an inch or two under his arm-pit, before he can bring it to its proper place. And yet you will see many persons do this, (and some good shots too,) but certainly if there is any thing which requires grace, I think this noble science does. The manner in which a Sportsman handles his gun, is in my view, an index to his proficiency in the art; for I never yet saw a man use his gun with grace, *who was an inferior shot.* The beauty of any thing is constituted by the symmetry or proportion of one part with another, and these with the whole; and perfection in any science or art, is only achieved, when not only the general and leading principles are acquired, but the minutiæ also.

To attain this, handle your gun very frequently, (but always uncharged)—hold it carelessly in your hand, or on your shoulder, and repeatedly throw it to your sight at some distant object, until your familiarity with it is so great, as to make you as perfectly drilled to it as the soldier is to his musket. Just behold one of our militia-men attempt the manual exercise, and then witness a regular, or a marine, and it needs no further argument to convince you of the necessity of constant drilling, until you are perfect in handling your gun. It is a great acquisition to sight your gun quick, or to become a *snap-shot*, as it enables the shooter to be more successful in thicket shooting, where the game often springs at his feet, and passes swiftly through the dense shrubbery, and only a trifling opening offers. Success in this case can only attend, with any degree of certainty, him who has habituated himself to sighting and shooting quick. I do not mean that you should *hurry* yourself; there is a vast difference between being expert, and being hurried. An expert shot will so economise, (if I may thus speak,) his moments of shooting, as to bring his gun to his shoulder, and sight the bird at the same time; and knowing the precise moment when the impulse to the trigger is to be given, he is quick, and yet deliberate. But a hurried person is always taken by surprise, and disconcerted at the moment of shooting, and before he determines the correctness of his aim, fires, and either misses his object, or tears it to atoms.

After you have become expert in handling your gun, I would advise, before you take the field in search of game, to practise at other things. These may be objects, such as stones, or blocks of wood, thrown in the air, or swiftly by you, by a companion. But, in either case, never put your gun to your shoulder until the article is fairly in the air. A most excellent plan will be found in the following:—Tie a block of wood, (the size of a lark,) to the end of a long string, and let this, if possible, be suspended from the projecting limb of a large tree, or some tall object; then take a side or an oblique situation of fifteen or twenty yards from it,—let some friend draw it back to the stretch of the cord, and let it swing, and while in motion, fire at it; this do repeatedly, and until you can strike it almost successively, always minding to keep up the swing of the gun in proportion to the motion of the target. When you have become perfect in one position, try another, and so vary the motion of the target in every manner as may accord with the flight of a bird. One hour a day, on several days spent in this way, will so accustom you to the use of your gun, that its advantages will be felt as soon as you take the field after game. There are those, however, who condemn every thing of this kind, as being unlike the flight of game, and would rather recommend you to practise on swallows, blackbirds, bats, and pidgeons from the trap. If, however, my plan has nothing else to recommend it, it has the merit of discouraging the destruction of life, which must necessarily follow the other plan; and this destruction of innocent birds I do most heartily deprecate, for, independent of the unnecessary waste of life, it is a public injury, for those birds destroy

myriads of insects, which are injurious, and are only prevented from being exceedingly annoying to our own species, by the wise provision of our Creator, in placing those very birds as their destroyers which are recommended as subject of sport and cruelty. Beside, the flight of these birds is as unlike the flight of game, as is the motion of the things which I recommend. The object in recommending either, is to enable the shooter to sight correct'y and shoot quick, and this may be done as well with one as the other. Nothing short of practice at the very game itself, will make the shooter perfect in the science; there are so many things to be learned in the field, (which I shall take occasion to notice hereafter,) that all other practice can have no other tendency than to make the learner familiar with his gun.

The flight of the various game so differs, that it is absolutely necessary to practise on every kind, before a man may successfully contend with each of those which constitutes our variety. I have known those who could shoot Rail, that could not kill Woodcock; and then, again, those who were successful at Woodcock, not able to kill Partridges; and a friend of mine, who was an excellent shot at Partridges, I saw miss eight times successively at Snipe: and most every Sportsman knows the difficulty of killing a Pheasant.

In holding your gun, I recommend you to gripe with your left hand, about midway between the tail-piece and guard, and instead of bringing your gun up in a direct line to your shoulder, to throw it gently into its place, by keeping it rather from you and across you, with the muzzle elevated, and making a slight curve outward, until it is on a level with your shoulder, when it may be brought gently, but solidly in its place; you thereby avoid bringing it into contact with your clothes, or accoutrements, which are hanging over your shoulders. The proper plan of sighting a gun, is to fix your eyes intensely on the object to be shot at, and the gun brought up in a line of aim with the object, without diverting your eye for a moment, or squatting your cheek down to your gun; this you will be the better able to accomplish, by having the stock of your gun rather straight and long, as it will necessarily keep your head more upright, by which means you can more distinctly see the object you are going to shoot at, beside avoid the intolerable boxing, which is consequent to all who press their cheek forward against the breech of the gun. A long stock, also, will press against the shoulder, and serve to steady your gun, as well as to break the rebound, which short-stocked guns, are always subject to; for it is evident, that if the stock is so short as to admit the face to press forward to the breech, that the constant rebounding of the gun will act against the cheek instead of the shoulder, and cause a head-ache, which at times is almost insupportable, beside the danger of having the eye injured by the broken particles of the percussion cap.

Many persons, in griping their guns with the left hand, do it immediately on the guard, and under the locks. I never could see any advantage arising from this plan, but always regarded it as an affectation on the part of those who practised it, to imitate some few eccentric beings, or to be so themselves; for I have more than once witnessed, that some of those who strenuously recommended this plan when at home, forget to exercise it when abroad. For my part, I condemn it as more dangerous in the event of a gun's bursting; beside, it does not give the shooter as much control in the management of his gun as the common plan. In the first place, the construction of a gun, and its balance, point out, that midway between the tail-piece and guard, is the only proper place for the left hand, which gives the possessor a power to wield his gun with more certainty and ease, especially in thickets; and in the second place, it is more free from danger should the gun burst. Most stub and twist guns, when they burst, do so at the breech, and not more than four inches along the barrels. I have witnessed, within a few years, four guns of this description bursting, and the owners escaped injury, except one, who always caught his gun at the guard,—and the consequence to him was the loss of his thumb, and part of the hand. One of the others which burst, was held on the plan I recommend, and the owner thereby escaped a most dreadful accident, as his gun burst at the breech, tore off the lock, guard, and part of the stock, within an inch of his right hand, and so completely were the parts severed, that he held in his left hand the barrels, while in his right was the butt of the stock, completely detached from the former, and had he griped his gun on the guard, the inevitable consequence would have been the entire loss of his hand, and perhaps his life.

I.

THE SPORTSMAN'S CHAMBER.

This room, which is exclusively my own,
And which to every other, I prefer,
Is furnished for convenience, not for show;
Plain, but yet clean—retired, yet o'erlooking
Villages, and woods, and fields, and rivers;
And giving to the eye a distant view
Of one great town, whose constant bustle, and
Ne'er ceasing sounds, disturb not meditation
Where I write. The firm floor is cover'd

With a cloth which vies with April's verdant
Meads, when the blythe robin has begun to
Carol in the woods. Near to the fire-place
Is a mat, on which my faithful Pointer
Takes repose when home returned, and weary
From the chase. There, by the closet, stands my
Double-barrel instrument of death, well
Protected in its leathern coat. Not far
From that, on hooks projecting from the
Whiten'd wall, game-bags and shot-belts are
Suspended. Hard by my wardrobe is;
And over it, in not the most methodical
Array, of books a small but choice collection.
These serve to while away the hours when
Sickness or foul weather keep me home.
Snug in a corner is my cot, friendly
Receiver of my jaded frame, when from
The fields I come laden with spoils. A desk,
A single table, two arm-chairs, (one for
A friend,) complete the scanty list of goods
And chattels that my room contains. And yet
For unpretending bachelor like me
These will suffice. As simple quite, the
Ornamental part. Over the mantel-
Piece a portrait of my mother hangs, sketch'd
By myself in boyhood, long ere the cares
Of life had rais'd one wrinkle on my brow;
Her full, dark eye is fixed on me in
Tenderness, and her scarcely open mouth
Is smiling, perhaps at the success of
This my juvenile aspiring. Around
The walls, promiscuously arranged, are
Some few sporting pictures, painted in
By-gone days, when shooting and the chase were
Follow'd by a race of men such as the
Fields and woods are not soon destined to
Behold again; a hardy, free, and
Jovial set of beings, who shot and
Hunted for the love they bore to healthful
Exercise and sylvan sports. The noble
Art of hunting for the pot, was then but
Little known; pecuniary thoughts and
Culinary calculations, never
Disturb'd their minds; their ammunition, game,
And purse, were equally their comrades, and
Their own. Then there was no anticipating
Of the seasons: Game in their days was
Unmolested left, till by the hand of
Time matured, and quite prepar'd to use the
Means that Nature had bestowed to escape
Its numerous foes. These men my plates

Exhibit in various circumstances
Of the day, as finding, killing, resting,
And returning home; fatigued, but yet
Invigorated by the sport. The modern
Caricatures I despise: they prove
Degeneracy in both the artists
And admirers: a vitiated taste
Alone can love to see those manly sports
Thus ridiculed; and therefore I condemn
Them all. On brackets here and there about
The room, guarded from dust, and the rude touch
Of people over curious, by cases
Fac'd with glass, are some few specimens of
Birds, stuff'd by my friend J. D[illegible]'s hand, the Wood-
cock,
Quail, and Snipe, in form and attitude so
Well preserved, that even life itself is
Scarce more natural. 'Tis birds alone I
Hunt. The savage Panther and the surly
Bear, I leave to hunters more robust; nor
Now does even the timid Deer or
Wily Fox decoy me from my home.
Let the rough Rabbit-hunter go his rounds,
And poke about 'midst rocks and roots of trees,
With hound and ferret, to drive out the poor
And worried quadruped, that for awhile
Has taken shelter there; if pleasure he
Can find in catching with his hand a
Frighten'd coney when trying to escape
His tutor'd vermin, I envy not his
Taste, nor much admire the skill display'd in
Such plebeian sport. For me, I love to
Scale the hemlock-covered mountains, where the
Proud Pheasant spreads his fan-like tail, droops low
His wings, and full of vernal ardour, gives
Intimation loud to all his wives that
He (great Turk!) is ready to return their
Annual loves, *drumming* them to enjoyment.
There in the fall I find the full grown
Families around the base, and on the
Sides of hills abrupt, and joy to hear them
Whirring through the woods. Or in the vales
Below I beat the stubble fields for Quails;
'Tis there our dogs show best, as ranging o'er
The extended plains, they eagerly inhale
Th' autumnal breeze; a sudden start, and
Added earnestness, demonstrate they have
Struck the scent; assur'd of which, they draw with
Steady, cautious step, up the full stream of
Tainted air, till having reached the spot
Beyond which it were dangerous to proceed,

Firmly they stand, and point where lies the game.
In swampy bottoms, thickly covered o'er
With alders, or the almost impenetrable
Briar, I sometimes spring with spaniels, the
Least wary of our feather'd game, and most
Delicious to an epicure. And yet
But little satisfaction does it yield
To hunt for Woodcocks in solstitial heats,
Compared with that amusement when the
Falling leaf give signs of their departing
From our coast; then, birds full plumaged, and
Well-open'd woods, make this of all our shooting
Most delightful. Snipes, too, I love to shoot.
Not the rank beach-birds, allur'd by stools to
Meet a 'leaden death,' but the sleek English
Snipe, whose zig-zag motion through the air
Puzzles the sight of inexperienced shots;
These, when abundant, need no dog to find
Them; and when scarce, a slow, staunch Pointer, suits
Them best. From sports like these, not too
Laborious, I return; refreshment
In my own snug chamber soon procure; then
From a cupboard, (not till now made known,) I
Find some comfort in a cordial glass;
When o'er our grog, and Pellon-brand cigars,
My friend and I discourse sweet music on
The past excursion, make fresh arrangements
For the coming morn, and at the hour of
Ten, yawning, shake hands, and bid good night.

New-York, March, 1832. D. J.

From the American Turf Register.

WESTERN SHOTS.

Our western marksmen of the present day do not confine themselves to the use of the rifle alone, (like the pioneer "Hunters of Kentucky," who despised a "smooth bore,") but handle the fowling piece with equal facility; indeed some use it exclusively. In Cincinnati, and the vicinity, we can boast of some first rate shots, who would be "hard to beat" any where.

A Shooting Club, recently formed here, will no doubt bring out some fine shooting; an account of which, if acceptable, I shall occasionally furnish for your valuable Magazine. At present, I shall merely give a brief sketch of a few shots previous to the formation of the Club.

Two of our best marksmen went out one afternoon, snipe shooting. Each killed 14 snipe, making 28; and the 29th was shot at the same instant by both, which they counted as 14½ snipe a piece. On their way home, in the evening, they called at a pigeon match, and obtaining privilege to shoot, tried each other.

Distance 20 yards—9 birds to each man.

Mr. Corben killed - -	9
Mr. Aumack, - - -	9

At a match, some time afterwards:—Distance 20 yards—17 birds to each man.

Corben killed - - -	17
Aumack - - -	16—missed 1—the 17th.

At this match very fair shooting was made by others of the party, which I regret being unable to furnish at present.

At another pigeon match:—Distance 18 yards—2 birds put into the trap or box, to be let out together—15 birds to each man—both barrels to be used.

Mr. Corben killed his 15 birds at 7 rounds, having shot two at once, which crossed each other.

Mr. Wright killed 11 out of the 15.

Mr. Noble, 11 " "

On other occasions, at 18 to 20 yards—10 birds up—10, 9, 8, and 7, has generally been the result.

Although much improvement is expected from the *younger* members of the Club, yet it is very questionable if they will ever be able to excel their *elder* brethren. An emulation, however, is excited among them, which I hope will enable me to report to you hereafter some fine shooting.

To conclude, I shall just mention the game killed by a member of the Club in one year, viz.

20	Woodcock.
102	Snipe.
38	Ducks.
66	Rabbits.
1226	Quails.
1452	in all—57 times out.

Killed also an abundance of less valuable game, not counted.

Last year, 75 Woodcock—other game not yet reported.

I am happy to report to you, that the two last winters (counting the present as one, and presuming it to be nearly over,) have not been so destructive to the Partridge in this part of the country as at first apprehended. The western sportsmen highly approve of the humane regulations adopted by their eastern brethren for the preservation of this valuable bird, and will no doubt adopt similar ones when necessary. MARK.

Cincinnati, Feb. 3, 1832.

Extracted from Silliman's Journal.

PERCUSSION POWDER.

Gunpowder made of chlorate of potash, sulphur, and charcoal, is much stronger than that made of saltpetre. Welter filled small bombs with this powder, buried them in the ground, and then caused them to explode. They were constantly broken into pieces of the size of a horse-chesnut, while those exploded with common gunpowder, under circumstances precisely similar, were broken into much larger pieces. As a material for priming, to be fired by percussion or otherwise, this powder has serious inconveniences. It soils and corrodes the lock very rapidly, a defect which cannot be easily remedied, and the use of it is very much abandoned.

A preference is therefore given to a powder composed of ten parts of fulminating mercury, and six of common priming powder. The fulminate is ground upon a marble slab with a wooden muller, after having been moistened with thirty per cent. of water; six parts of common powder are then added, and the grinding continued. A firm paste is thus attained, which being properly dried, is divided into grains, one of which is sufficient for a priming.—*Ann. de Chimie, Sept.* 1829.

COMMON SALT A REMEDY FOR ANIMAL POISON.

The Rev. J. G. Fischer, formerly a missionary in South America, says he "actually and effectually cured all kinds of very painful and dangerous serpents' bites, after they had been inflicted for many hours," by the application of common salt, moistened with water, and bound upon the wound, "without any bad effect ever occurring afterwards."

"I, for my part," says he, "never had an opportunity to meet with a mad dog, or any person who was bitten with a mad dog. I cannot, therefore, speak from experience, as to hydrophobia, but that I have cured serpents' bites always, without fail, I can declare in truth." He then cites a case from a newspaper, in which a person was bitten by a dog, which in a few hours died raving mad. Salt was immediately rubbed for some time into the wound, and the person never experienced any inconvenience from the bite.

Mr. Fischer was induced to try the above remedy, from a statement made by the late Bishop Loskiell in his history of the Missions of the Moravian Church in North America, purporting that certain tribes of Indians, had not the least fear of the bite of serpents, relying upon the application of salt as so certain a remedy, that some of them would suffer the bite for the sake of a glass of rum.—*Jour. of Roy. Inst.*

TO RESTORE THE ELASTICITY OF A DAMAGED FEATHER.

A feather, when damaged by crumpling, may be perfectly restored by the simple expedient of immersing it in hot water. The feather will thus completely recover its former elasticity, and look as well as it ever did. This fact was accidentally discovered by an amateur ornithologist of Manchester. Receiving, on one occasion, a case of South American birds, he found that the rarest specimen of it was spoilt, from having its tail rumpled in the packing. Whilst lamenting over this mishap, he let the bird fall from his hands into his coffee-cup; he now deemed it completely lost, but, to his agreeable surprise, he found, that after he had laid it by the fire to dry, the plumage of the tail became straight and unruffled, and a valuable specimen was added to his collection.—*Ib.*

DESTRUCTION OF LIVE STOCK BY WOLVES IN RUSSIA.

In the government of Livonia alone, the following animals were destroyed by Wolves in 1823. The account is an official one.

Horses, - - -	1,841	Goats, - - - -	2,545
Fowls, - - -	1,243	Kids, - - - -	183
Horned cattle, -	1,807	Swine, - - - -	4,190
Calves, - - -	733	Sucking pigs, -	312
Sheep, - - -	15,182	Dogs, - - - -	703
Lambs, - - -	726	Geese, - - - -	673

[*Revue Encyc. Sept.* 1830.

From the London Sporting Magazine.

ANECDOTE OF A DOG.

A faithful Dog followed the hearse of its master to a burial-ground two miles from London. Nothing could prevail on it to remain in the house of the deceased when the body was removed from it. A number of persons assisted at the funeral, some of whom (the family) the animal was accustomed to. With none of them would it re-

turn, but laid itself down in a mournful posture, and howled over the grave of the departed. In vain was persuasion used to get it away. At night the watchman attempted to dislodge it by force: it resisted, ran away from the man, and again returned to keep watch over him who had fed and sheltered it during his life. On the following morning the sexton used his endeavours to take away the Dog; but in vain. He returned with food, thinking that the poor brute would follow him from hunger: this failed, and it refused sustenance. On the second day, a number of persons went to the grave with meat and drink to the trusty mourner: these it accepted, seemed grateful, but took up its first post, and stretched itself over the cold bed of its departed master. Day followed day, and the neighbours repaired from curiosity to the spot, and from humanity fed the Dog. I was told of this circumstance, and went to see this practical lesson of attachment and gratitude given by an irrational being to us intellectual lords of the creation. It was the eighth day when I saw the fact. On the next day, the animal was forcibly taken from the grave, and brought home by a kind neighbour, who treated it with all possible humanity. Nevertheless, the inflexible Dog ran away, and returned to its first position. It was then taken some miles from town, and closely confined for a few days, when it died of grief, probably broken-hearted—for such things are. What an example to cold, fickle, and ungrateful man! The survivors of the nearest relations and best of friends, wipe off hastily and soon after their death

"The tear forgot as soon as shed:"

they reject not food, nor refuse comfort—they keep not their vigil near the narrow bed of those who have nursed and served them: such privations are reserved for the animal which boasts not the light of reason.

SPORTING IN INDIA.

In youth the pleasures of hope form our greatest enjoyments; but, in the autumn and wintry season of our life, we must draw upon the pleasures of memory for our chief resource. Such is my case: and I derive much amusement from looking over my old portfolio, ransacking my writing desk, and from turning over the annals of other days, which my paper-drawer and library contain, and it would be my proudest endeavour thereby to convey entertainment to my readers. In this feeling, and with this view, I have drawn from a blotting-book a parcel of letters from a very good fellow, a Scotchman, written to me some years back from India, on the subject of Sporting there, and I shall make an extract from one of them, which I trust will not be wholly devoid of interest:—

"Shortly after my arrival at Calcutta, I was invited to a day's sporting by Major ——, which I accepted gladly, having great curiosity to witness Oriental hunting, which, I was led to think, must be, like other pastimes there, in Eastern splendour. Nor was I disappointed—the scene and our success surpassed my most *sanguinary* expectations. We started before day-break, in a style more resembling the march of a *corps d'armée*, or a triumphal procession in honour of the Goddess of the Chase, than the preparation for a day's hunting. No Scotch Laird, Yorkshire Squire, nor Melton Mowbray Sportsman, can conceive any thing equal to it: our strength and numbers, our arms and appointments, our slaves and attendants, were astounding to behold. A Tiger-hunt was the object in view, and a grand and memorable day we had. The Major, a fine portly man, was mounted on an elephant, from the elevation of which, placed in a castle, he scoured the circumjacent country with eagle eye, preceded by sharp-shooters, *tirailleurs*, scouts, spies, and savages, followed and surrounded by divers brother sportsmen, comrades, and domestics.

"We were not long before we found a Tiger, which afforded considerable sport, and was killed by a brother officer's rifle. From the dingle in which we found the last ferocious animal, we proceeded on with nobler game in view—the monarch of all beasts of prey; and, after some excursive riding, a magnificent Lion made its appearance. The sight was most grand! but I confess that at this moment, no small degree of fear mingled with my ambition to have to record a Lion-hunt amongst the adventures of my life. The attack seemed really more like actual war than any thing else, so great and grand was the enemy to which we were opposed. The bold Major and a dashing young Cavalry Subaltern, discharged their rifles simultaneously at the Lion, and each of them wounded him: infuriated with pain, the fierce animal attacked the elephant, whilst the Major seized another rifle and took deliberate aim at him; but being anxious that this shot might tell, he leaned so far forward, that he overbalanced himself, and fell from his castle into the Lion's arms, (or rather paws.) Here was an awful moment! but wonderful to tell, the Major got off with a broken arm only, a rush having been made towards the Lion, whereby he was despatched, covered with wounds, and torrents of blood streaming around. Nothing could be so brave, so desperate, nor so marvellous!"—*Ibid.*

FOX-HUNTING.

BREAKING COVER.

[*Vide* Plate V. Vol. 2.]

"Soon as Aurora drives away the night,
And edges eastern clouds with rosy light,
The healthy huntsman, with the cheerful horn,
Summons the dogs, and greets the dappled morn,
The jocund thunder wakes th' enlivened hounds,
They rouse from sleep, and answer sounds for sounds.
Wide through the furzy field their route they take—
Their bleeding bosoms force the thorny brake—
The flying game their smoking nostrils trace,
No bounding hedge obstructs their eager pace;
The distant mountains echo from afar,
And hanging woods resound the flying war—
The tuneful noise, the sprightly courser hears,
Paws the green turf and pricks his trembling ears,
The slacken'd rein now gives him all his speed,
Back flies the rapid ground beneath the steed!
Hills, dales, and forests, far behind remain,
While the warm scent draws on the deep-mouthed train."

Among the variety of sports common to this country, none are so manly and invigorating as Fox-hunting. This sport, so replete with enjoyment, is however confined to but few districts in the United States, and these are chiefly in the Southern states. From Maryland, south, this has always been the favourite amusement of the sportsmen, by whom it is followed with a keenness and perseverance, which show at once its fascinating tendency. There are, however, Fox-hunters in almost every state; but their number is so small, and excursions comparatively so few, to those of the Southern states, that it may properly be called a *Southern sport*; and it is a matter of surprise, that in the Northern states, (in most of which plenty of foxes may always be found,) so little attention is paid to a sport, with which none others can bear a comparison, whether it is for the rich variety it affords, the healthful exercise consequent to it, or the superior horsemanship required to follow it successfully.

Of the enjoyments of the field, the Chase has always been superlatively regarded, not only from its all-absorbing interests, but for the benefits to the hunter and community at large.

The beauties and merits of the Chase, consist of the soul-enlivening music of the hounds, the hilarity which always prevails in the company, the intrepidity of mind, and daring boldness, which fear no obstacles, and an acquirement of so good a knowledge of horsemanship, as to surmount great difficulties, without injury to the horse or rider. The benefits are, the necessity of early rising,—the continual exercise of the body, while the mind is enlivened by passing scenes, and an emulation to excel, when the prospect of victory is pressing the expectants in joyful anticipation to the desired goal. It is neither cruel to the horse, which derives as much pleasure nearly as his rider, nor does it pursue to death a useful or innocent animal, but a thief and a destroyer.

To the fastidious mind, most field amusements are objectionable, in consequence (as it is said) of their tendency to cruelty. In Fox-hunting, however, no such objection should present itself. Most enjoyments which this life affords, are allowable to a certain extent; every thing may be overdone; and that which at one time, by moderate use, is a source of delight, may, at another time, by dissipation, be an intolerable burden; but any enjoyment which, while it increases the happiness and welfare of an individual, is also of service to a community, becomes doubly imposing, and allowable. In this sense, then, should Fox-hunting be regarded; for in the first place it can only be properly done on horseback, which gives the rider a knowledge of the horse and horsemanship, and every man who is proficient in these things, is a useful member of society, either in agriculture or war; and again, the sportsman becomes healthful and endured to hardship, while the mind, having been enlivened and made buoyant by rural enjoyments, fits the possessor more properly to fulfil the moral and social duties of life.

The interests of the Chase can only be properly appréciated by those who have mingled in its pleasures. No tongue nor pen can do justice to an interesting chase; although volumes in prose and poetry have been written by able hands and practical sportsmen, and whose descriptions have been admired by the world, but which fall far short of the reality of these soul-absorbing pleasures.

As we shall in the progress of this work, have occasion to record some very celebrated Fox-hunts, it may suffice at present, to give a few rules on Fox-hunting, selected from very high authority, from which the sportsman may glean some useful hints:—

This author remarks, that "There are certain rules that ought to be observed by a huntsman: he should always listen to his hounds whilst they are running in cover; he should be particularly attentive to the head hounds, and he should be constantly on his guard against a skirter; for, if there are two scents, he must be wrong. Generally speaking, the best scent is least likely to be that of the hunted fox, and as a fox seldom suffers hounds to run up to him, as long as he is able to prevent it, so, nine times out of ten, when foxes are hallooed early in the day, they are all fresh foxes. The hounds most likely to be right are the hard-running, line-hunting hounds; or such as the huntsman

knows had the lead before there arose any doubt of changing.

"With regard to the Fox, if he breaks over an open country, it is no sign that he is hard run; for they seldom, at any time, will do that, unless they are a great way before the hounds. Also, if he runs up the wind,—foxes seldom do that when they have been long hunted and grow weak; and when they run their foil, *that* also may direct the huntsman. All this requires a good ear and nice observation; and, indeed, in these consist the chief excellence of a huntsman.

"The huntsman at a check, had better let his hounds alone, or content himself with holding them forward, without taking them off their noses. Hounds that are not used to be cast, will of themselves acquire a better cast than it is in the power of any huntsman to give them; will spread more and try better for the scent; and, if they are in health and spirits, they will want no encouragement.

"If they are at fault, and have made their own cast, which the huntsman should always encourage them to do, it is then his business to assist them further; but, except in some particular instances, they should never be cast as long as they are inclined to hunt. The first cast of a huntsman should be a regular one: if that does not succeed, he should be at liberty to follow his own opinion, and proceed as observation and genius may direct. When a knowing cast is made, there ought to be some mark of good sense or meaning in it—whether down the wind, or towards some likely cover or strong earth; however, as it is at best uncertain, and as the huntsman and the fox may be of different opinions, a regular cast should always be made before a knowing one is attempted, which, as a last resource, should not be called forth till it is wanted. The letting hounds alone is but a negative goodness in a huntsman; whereas it is true that this last gives him an opportunity of displaying genius, if he happen to possess so rare and valuable a qualification. There is one fault, however, which a knowing huntsman is apt to commit—he will find a fresh fox, and then claim the merit of having recovered the hunted one.

"It is always dangerous to throw hounds into a cover to retrieve a lost scent; and, unless they hit him in, is not to be depended on. Driven to the last extremity, should a knowing cast not succeed, the huntsman is no way blameable.

"When hounds are at fault, gentlemen are apt to contribute to their remaining so. They should always stop their horses some distance behind the hounds; and, if it is possible to be silent, this is the time to be so: they should be careful not to ride before the hounds or over the scent; nor should they ever meet a hound in the face unless with a design to stop him. Should a sportsman, at any time, happen to get before the hounds, he should turn his horse's head the way they are going; get out of their way, and let them pass.

"When the weather is dry, foxes will run the roads, particularly in heathy countries. If gentlemen, at such a time, ride close upon the hounds, they may drive them miles without any scent. High-mettled fox-hounds are seldom inclined to stop whilst horses are close at the heels of them.

"The first moment that hounds are at fault is a critical one for the sport: sportsmen should then be very attentive. Those who look forward perhaps may see the Fox; or, the running of sheep, or the pursuit of crows, may give them some tidings of him. Those who listen may sometimes take a hint which way he is gone, from the chattering of a jay, or perhaps be at a certainty from a distant halloo; nothing that gives any intelligence at such a time as this should be neglected. Gentlemen are too apt to ride altogether; were they to spread more, they might sometimes be of service; particularly such, as from a knowledge of the sport, keep down the wind; it would then be difficult for either hounds or fox to escape their observation.

"The idea that a fox never stops is a very necessary one for a fox-hunter, that he may be active, and lose no time; yet tired foxes will stop if you can hold them on; and they have been known to stop even in wheel ruts on the open down, and leap up in the midst of the hounds. A tired fox ought not to be given up; for he is killed sometimes very unexpectedly. If hounds have ever pressed him, he is worth your trouble; perseverance may recover him, and, if recovered, he most probably will be killed; nor should you despair while any scent remains. The business of a huntsman is only difficult when the scent dies quite away; and it is then he may show *his* judgment, when the hounds are no longer able to show *their's*. The recovering a lost scent, and getting near to a fox by a long cast, requires genius, for which huntsmen in general are not remarkable. When hounds are no longer capable of feeling the scent, it all rests with the huntsman; either the game is entirely given up, or is only to be recovered by him.

"If hounds come to a check on the high road, by the fox being headed back, if in that particular case, you suffer them to try back, it gives them the best chance of hitting off the scent again, as they may try both sides at once.

"When hounds are running in cover you cannot be too quiet. If the fox be running short, and the hounds are killing him, not a word should then be said: it is a difficult time for hounds to hunt him, as he is continually turning, and will sometimes lie down and let them pass him.

"In following hounds, it may be useful to know, that, when in cover, they run up the wind, you cannot in reason be too far behind them, as long as you have a perfect hearing of them, and can command them; and, on the contrary, when they are running down the wind, you cannot keep too close to them.

"When covers are much disturbed, foxes will sometimes break away as soon as they hear a hound, Where the country round is very open, the fox least likely to break is the one which you are hunting; *he* will be very unwilling to quit the cover, if it be a large one, unless he can get a great distance before the hounds. If sportsmen are desirous of a run over such a country, the likeliest means will be to post a quiet and skilful person to halloo one off, and lay on to him. The further he is before the hounds, the less likely he will be to return. The best method, however, of hunting a cover like this, which is full of foxes, is to stick constantly to it, not suffering the hounds to break so long as one fox remains:—if this be done two or three hunting days in succession, foxes will then fly, and good runs may be obtained.

"Frequently changing the country is prejudicial to hounds: should they change from a good scenting country to a bad one, they will be some time before they kill a fox, unless they have better luck than ordinary; whereas, hounds have always a great advantage in a country which they are used to. They not only know better where to find their game, but they will pursue it with more energy when they have found it.

"Huntsmen of penetration will observe where foxes like best to lie. Where there is a great tract of cover to draw, such observations are of great utility, and will save much time. Generally, foxes are partial to such as lie high, and are dry and thick at bottom; such also as lie out of the wind; and such as are on the sunny side of hills. The same cover where one fox has been found, if it has remained quiet any time, will most likely produce another.

"The season when foxes are most wild and strong is about Christmas; a huntsman then must lose no time in drawing; he should draw up the wind, unless the cover be very large, in which case, it may be better, perhaps, to cross it, giving the hounds a side wind, lest he should be obliged to turn down the wind at last:—in either case, he should draw as quietly as he can.

"The best drawing hounds are shy of searching a cover when it is wet; and on such occasions the huntsman should ride into the likeliest part of it; and as there will most likely be no drag, the closer he draws the better; huntsmen, by drawing in too great a hurry, frequently leave foxes behind them. Some huntsmen draw too quick, some too slow. The time of the day, the behaviour of the hounds, and the covers they are drawing, will direct an intelligent huntsman in the pace which he ought to go.

"When a fox slinks from his kennel, gets a great way before the hounds, and you are obliged to hunt after him with a bad scent—if you are in a country where foxes are in plenty, and you know where to find another, it will be advisable to call off, and try for a second. Unless a fox can be well pressed in the early part of the run, the hounds will not easily reach him; on the contrary, if he is at such a distance before them, as will enable him to regulate his pace, he will be very likely to tire out both horses and hounds—hence one very essential reason for speed in the fox-hound. When the fox is a great way a-head, he will listen to the hounds, and act accordingly—if the hounds are not able to blow him, the chase is sure to be very long, and will most likely end with the loss of the fox.

"During the time that hounds are drawing for a fox, the sportsmen should place themselves in such a manner that he cannot go off unseen. Foxes will sometimes lie in sheep's scrapes on the side of hills, and in small bushes, and even in stubbles, where huntsmen seldom think of looking for them; yet, when they hear a hound, they generally shift their quarters, and make for close cover.

"When a huntsman has a perfect knowledge of his country, he possesses an eminent advantage—he can trot away and make a knowing cast, from having observed that nine foxes out of ten, with the wind in the same quarter, have constantly made for the same point or cover.

"When a fox runs into a village, great caution is necessary: if he is halloo'd there, the huntsman should get forward as fast as he can. Foxes, when tired, will lie down any where, and are thus often lost. A wide cast is not the best to recover a tired fox with tired hounds—they should hunt him out inch by inch, though they are ever so long about it, and for the reason just given, that he will lie down any where.

"The true spirit of Fox-hunting is not to walk down a fox, or starve him to death, but to keep close at him, and kill him as soon as you can. A fox-hound may hunt too much; if tender nosed, and not over-hurried, he will always hunt enough; whilst the lightest bred hounds may be made to tye on the scent by improper encouragement. Slackness in the men occasions slackness in the hounds; and any person may perceive by the manner in which the hounds hunt, what kind of men they have been accustomed to.

"The many chances in favour of the fox in Fox-hunting, such as the frequent changing, the heading of the fox, his being coursed by sheep-dogs, long faults, cold hunting, and the dying away of the scent, make it necessary to keep

always as near the fox as possible:—this should be the first and invariable principle of Fox-hunting.

"Nothing is more essential in Fox-hunting, than the huntsman knowing the country he is to hunt. Foxes are not capricious creatures, but know very well what they are about: are quick in determining, and resolute in perseverance. They generally have a point to go to; and, though headed and turned directly from it, seldom fail to make it good at the last; *this*, therefore, is a great help to a huntsman of discernment.

"With respect to digging of foxes that have been run to earth, the hole is generally followed, except where the earth is large, and the terriers have fixed him in an angle of it—the more expeditious method then is to sink a pit as near to him as possible. By listening above ground, that is, by placing your ear close to the ground, a tolerably correct opinion may be formed of the situation of the fox, from the noise of the terriers. A terrier should always be kept at the fox, otherwise he may move, and in loose ground may dig himself further in. In digging, room enough should be kept, and care should be taken not to throw the earth where there may afterwards be occasion to remove it. In following the hole, the surest way not to lose it, is to keep below it. All the holes on the surface should be stopped, lest the fox should bolt unseen.

"But, before the operation of digging is commenced, the huntsman should try all round, and be perfectly satisfied that the fox has not gone on: 'for want of this precaution, (says Beckford,) I dug three hours to a terrier that lay all the time at a rabbit.'

"A fox will sometimes go over an earth, and will not go into it: he will sometimes go in and will not remain—he may find it too hot, or not like the company he meets with there—a fox has most likely good reasons for all he does, though we are not acquainted with them.

"Huntsmen, when they get near a fox, will sometimes put a hound in to draw him. This is, however, a cruel operation, and seldom answers any other purpose than to procure the dog a severe biting, the fox's head generally being towards him; besides, a few minutes digging will make it unnecessary. If you let the fox first seize the handle of your whip, the hound will more readily draw him.

"If foxes are bred in an earth which is deemed unsafe, they had better be stunk out; that or any disturbance at the mouth of the hole, will make the old one carry them off to another place.

"Foxes, when they are much disturbed in open countries, will lie at earth. If any difficulty occurs in finding, stinking the earths will sometimes produce them again.

"Stinking earths may be practised in the following manner:—Three pounds of sulphur and one pound of assafœtida, should be boiled up together; matches should then be made of brown paper and lighted in the holes, which are afterwards stopped very close.

"In regard to bag foxes, hounds should be as little used to them as possible:—the scent of them is stronger than that of other foxes; and is therefore apt to make hounds idle; besides, in the manner in which they are frequently turned out, it makes hounds very wild. They seldom fail to know what is going forward before the fox is turned out; and if often used to bag foxes, will become riotous enough to run any thing. A fox that has been confined long in a small place, and carried out afterwards some miles in a sack, his own ordure hanging about him, must needs stink extravagantly; to which may be added, he is most probably weakened for want of his natural food and usual exercise; his spirit broken by despair, and his limbs stiffened by confinement; he then is hurried out in open ground, without any point to go to; he runs down the wind, it is true; but he is so much at a loss all the while, that he loses a good deal of time in not knowing what to do; while the hounds, who have little occasion to hunt, pursue as closely as if they were tied to him. If, however, it be necessary to turn out a bag fox, he should be turned into a small cover, and the hounds should be laid on as quietly as possible—in order that they may suppose they found him; and as bag foxes always run down the wind, those who turn them out, may therefore choose what country they shall run.

"'To those who may think the danger that attends hunting, (says Beckford,) a great objection to the pursuit of it, I must beg leave to observe, that the accidents which are occasioned by it are very few. I will venture to say that more bad accidents happen to shooters in one year than to those who follow hounds in seven. You will remind me, perhaps, of the death of F——h and the fall of D——t; but do accidents never happen on the road? The most famous huntsman, and the boldest rider of his time, after having hunted a pack of hounds for several years unhurt, lost his life at last by a fall from his horse, as he was returning home. A surgeon of my acquaintance has assured me, that in thirty years' practice, in a sporting country, he had not once an opportunity of setting a bone for a sportsman, though ten packs of hounds were kept in the neighbourhood. This gentleman surely must have been much out of luck, or hunting cannot be so dangerous as it is thought. Besides, they are all timid animals which we pursue, nor is there any danger in attacking them: they are not like the furious beast of the *Gevaudin*, which, as the French author informs us, *twenty thousand French Chasseurs went out in vain to kill!*'"

NOTES OF A NATURALIST.

By Jacob Green, M. D.

[Concluded from page 10.]

June 18*th*. *Locusts* begin to die; the male first. Oxalis stricta, and Ascetocella, flower.

Cockle, (agrostemma,) blossoms.

Dung-beetle rolls his balls, (scarabæus carnifex.) This beetle, it is thought, will produce an oil and a colouring dye. The Oil-beetle, (meloe procarabæus,) has been found to produce a medicinal oil. They are to be collected in the spring. Only females are used for the above purpose.

Cherries are ripe.

Lampyris, or *fire-fly*, first seen. The light of this insect increases in an atmosphere of oxygen gas. If it gets wet in the gas it soon expires. Perhaps phosphoric acid is thus produced, and the acid then kills the insect.

I observed a battle between the old blue birds and a domestic cat. The birds darted violently at the cat, making a snapping noise with their bills, which eventually drove her away. The young birds have neither the blue feathers on the back, nor the brown ones on the breast, as their parents. Another pair of Blue Birds have made their nest between the weather-boards and the plastering of the kitchen: their entrance to it is through a knot-hole, and in a situation very favourable for my observations. The following was a curious manœuvre to keep the nest clean while the young were growing. When they brought food to the young, they always carried away with them, when they flew off in search of more, the mutings of their offspring; which were often projected directly into their bills, for that purpose. Since writing the above, I find that Montague states the same fact respecting the English Nightingale, and adds—"The sagacity of this, as also the disposal of the egg-shells, is a remarkable instinctive power, implanted in these little creatures for the security of their young; to assist which, Nature has given a skin or covering, in which the mutings are enveloped." (See Ornithological Dictionary, p. 31.)

19*th*. A large brown Caterpillar, about two inches long, with seven orange-coloured spots on its back, made its appearance in the willow tree. The sides and upper part of this insect, are sprinkled with small whitish spots, and covered with hairs and spines. On placing some of them in a box, for the purpose of examining their transformations, the following facts were the result. Twenty-four hours after, they became remarkably active, running about, and eating the leaves of the willow. This continued some time; when they fastened themselves by the extremity, (I suppose the tail,) to the top of the box, the head hanging downwards, and curved a little towards the body. In this situation, they remained about eight or ten hours; a glutinous kind of fluid exuding from every part except the head, which presently dropped off. The whole insect then assumes a different form and appearance. The spines on the back vanish, except three near the head; the body is much smaller, and attenuated; the colour, which at the falling of the head was a light ash, gradually grows darker and darker.

22*d*. A large *Yellow Butterfly*, (papilio turnus,) and an ash-coloured *Sphinx*, striped with black, made their appearance.

23*d*. *Wild Buckwheat*, (polygonum fagopyrum,) blossoms. Windsor, or *Horse Beans*, ripe. Yellow and blue *Cerambyx*, seen on the barberry vine.

A day or two after the young blue birds had left the nest, to which they never returned; the old pair began to clean it out, and rebuild. They proceeded precisely in the same manner as at first.

28*th*. Common *Elder* blossoms. Micheaux remarks there is no difference between this and the S. nigra of Europe, except in size, the one being a tree and the other only a shrub!

I witnessed a contest between the Cow Bunting (Emberiza Pecoris,) and the Robin, in which the first was the conqueror. Till now, I supposed the Cow Bunting chose retired places for rearing its young. The Robin had a nest on the neighbouring tree. Perhaps the Bunting was about depositing its eggs in the nest of the Robin, which may have occasioned the conflict.

Horehound, (marrubium.) The flowers of this plant are just falling off, and it is now cut and dried for domestic purposes.

Toad Flax, sometimes called Butter and Eggs, (linaria vulgaris,) flowers. Though this is a very common plant along the road-sides, and in waste fields, it probably is not a native. I have some of them transplanted into the garden, and its long spikes crowded with bright flowers, adds much to the beauty of the borders.

Raspberries ripe. There is a kind of apterous insect, with a coloured head and six feet, which infests this plant at this season.

Large Pincher, a variety of lucanus capriolus, appears.

Common Sage, (salvia officinalis,) begins to flower: it is now dried for culinary use.

Sea Kale, (crambe maritima,) in seed. The flowers of this plant were eaten long before the young sprouts, which are now esteemed so highly. Lovel mentions this in his *Adversaria*, page 92. This vegetable was introduced into the United States about twenty years ago by a gentleman of Boston, (Mass.) It is now common in gardens.

July 1*st and* 5*th*. Rye harvest.

Observed the Night-Hawk, (Caprimulgus Americanus,) in search of gnats, just at sun-set, the time at which it usually appears for this purpose. I have heard it, however, at noon. It soars very high in the air, and then darts in an almost perpendicular direction, and with great velocity on its prey, which is commonly in thick swarms near the ground. At the moment of turning to ascend again, it utters a shrill kind of noise, something like the croaking of a bull frog. This remarkable note, I cannot find mentioned by any ornithologist. I suppose it is occasioned by the sudden entrance of the air into the throat, through the small aperture in the thin membrane which lines the mouth. On capturing its prey, the mandibles are widely expanded, and then this thin membrane is stretched or tightened like the head of a drum.

8*th*. The *Locusts* have ceased to sing, and the branches of the trees are loaded with their eggs. They seem to prefer the apple trees for this purpose.

10*th*. A species of Cerambyx seen. The elitra are of a dusky orange colour, with six black spots.

The apterous insect, which I mentioned on the 28th of June, as infesting the raspberry, I placed in a box, where, after fastening itself by the tail, it assumed in a few days the appearance of a spotted curculio. Its covering, which it has now left, looks like a cocinella punctata, or hieroglyphia. The animal in its larva or catterpillar state, fed upon the raspberry—but in its winged form, (though raspberries were in the box,) I found it eating a decayed insect. Quere: Do not other insects, which undergo a similar metamorphosis, also change the quality of their food?

The young of the Picus Pubescens flew into one of my rooms. When I took it into my hands it uttered most piteous cries, and appeared greatly enraged. It plucked with its bill some feathers from its wings, and pecked furiously at my hand. As I held it by the wings, its struggles were so violent as to break off the principal bone of one wing near the shoulder. I judged it to be a young bird from the *smallness* of the red mark on the back of the head. In other particulars, it exactly agrees with Wilson's plate of the Picus Pubescens.

14*th*. Cerambyx Cinnamomeus, found in decayed wood —all the species of this genus which I have seen, make a sort of squeaking noise when held in the hand.

Scarabæus Carolinus common at night. The muscular strength of this insect is remarkably great, and may be illustrated by placing it under the hollow bottom of a large candlestick; in its endeavours to escape it will move the candlestick along the top of the table, much to the surprise of those who are unacquainted with the cause.

The common *Locust*, (grillus,) heard. The note of this is very different from that of the Cicada septemdecima.

The *Brown Caterpillar* mentioned on the 19th of June last, is now a *Brown Butterfly;* the lower wings of which have similar orange spots to those on the back, besides some others of a different colour. Quere: Do not the colours in the caterpillar, in every case, resemble those of the butterfly it produces? The chrysalis of this insect splits open in the back near the head.

20*th*. *Young Swallows* now leave the nest. I saw numbers of them on the fences, which were so tame as to be easily captured. Pyrola maculata in flowers. I saw also some blossoms of the Pyrola Umbellata, and P. Rotundifolia. These last, however, are now dropping off. The leaves of the P. Maculata and P. Umbellata, are used by the farmers in this neighbourhood as a blister, instead of the Spanish-fly, (lytta vesicatoria,) and they supply its place very well.

25*th*. A Caterpillar of a pea-green colour, with two white lines down the back, having two tails, made its appearance. I enclosed one in a box, and found that it does not undergo the transformation usual to caterpillars. It fastened itself in a horizontal position to the top of the box, where remaining motionless for some hours, it burst open, and the whole of its body, except the upper skin, the head and tails, were converted into green eggs, of an eliptical form, thirty-eight in number. The other parts then fell off. The caterpillar was about an inch long. I do not find in M. de Reaumur's Insects any account of a similar process. Quere: Might not these eggs have been those of the Ichneumon, deposited in the body of the caterpillar!

August 20. Caty-dids sing about this time.

29*th*. Hops (humulus lupulus,) are pulled. The vulgar notion is, that a September wind must not blow upon them.

Potatoes are gathered in.

A beautiful *Glow-worm*, which I cannot find described, was taken in the woods. It measured two inches; its colour on the back, when examined by the light of a candle, was of a dirty orange-yellow, with whitish bands, which formed the articulation of the worm; the under side was of a lighter colour. But when examined by a faint light, or in the dark, it presents a most brilliant appearance. The whitish bands which formed the articulations, and which were twelve in number, then assumed a strong and steady phosphorescent light, something like the evanescent glow of the common fire-fly. The articulation near the head was by no means so bright as the others, and the one next the tail, was interrupted in the middle of the back. Very near the termination of each of the little luminous bands on the sides, there was a bright spot, about the size

of a pin's head. These were eight in number, on each side, and appeared in a straight line, when the animal was in motion. When the room was entirely dark, the light emitted from the worm was of a clear white hue, but by candle-light it was clear pea-green, similar to the phosphorescence of the sea. The under side of the body was not in the least degree luminous. When it was touched with a little force it drew itself up in a kind of spiral form, like a *cornu ammonis*, and then the luminous bands seemed to radiate from a centre, and the bright spots formed a circle within them. The animal had six legs in front, and a kind of leg or support beneath the last articulation. The head could be withdrawn and projected from the body, something in the manner of a land tortoise. It deserves the name of Lampyris Splendidissima.

Near the window of my study, I noticed this morning a caterpillar climbing up a single web, which he had suspended from the branch of a tree; the thread was about ten feet long, and the insect was attached to the lower end of it. I at first thought it entangled in the web of a spider. On examination, I found that he must have attached the web or line himself to the projecting branch of the tree, perhaps for the purpose of descending during the night in search of food; and now as the morning advanced, he was returning to the tree to avoid his enemies. He clambered up the line with difficulty, and stopped to rest himself every foot or two of his ascent. He was an inch and a half long; was covered with yellow hair; had two black and broad filaments projecting from the tail, and four from the head.

September 27. Solidagos and asters, in all their varieties, adorn the fields and hedges. Winter potatoes gathered. Honey collected from the hives.

The leaves of the Sumach, (rhus,) turn red mixed with brown. This I think is the first shrub which changes the colour of its leaves in the fall.

I observed that the land tortoise, which I have in a pen, begins to burrow in the ground; he now remains a great part of his time in a hole I made for him under the earth, though during all the summer months he never could be induced to stay but a short time in it.

28*th*. The leaves of the Maple begin to change colour.

I neglected to mention, that on the 28th and 29th of August, all our Martins left us. If the second brood, (for they usually have two broods in a season,) is not fledged, or otherwise prepared to accompany them when the time of migration arrives, it is left behind in the nest. In cleaning the nest when they return the following spring, the dried carcases are thrown out.

October 1*st*. I saw to-day what appeared to me the same species of butterfly, as that mentioned April 1st; if so, this insect, as the one mentioned May 4th, continues with us during the greater part of the year.

Large numbers of orange-coloured and brown caterpillars were seen creeping along the fences, and upon the shrubs. Upon confining some of them in a box, they wrapped themselves up in their cocoons.

4*th*. The elm and the black cherry tree begin to change the colour of their leaves, many of them dropping off. A caterpillar about three inches long, of a dusky brown colour, with oblique yellow bands on the side, and having a curved protuberance, something resembling a horn, placed near the tail, was observed on the corn.

Catydids have ceased to chirp. I observed that these insects within ten days past, commence their chirping about one o'clock in the afternoon, though when they first appeared, they rarely began before sun-set.

I hear no more the notes of our little Blue Bird,—he is the last songster in the fall, and the first in the spring.

> "When all the gay scenes of the Summer are o'er,
> And Autumn slow enters, so silent and sallow;
> And millions of warblers that charmed us before
> Have fled in the train of the sun-seeking swallow—
> The Blue Bird forsaken, yet true to his home,
> Still lingers, and looks for a milder to-morrow,
> 'Till forced by the horrors of Winter to roam,
> He sings his adieu in a lone note of sorrow." WILSON.

12*th*. Wild Geese begin to pass over this place on their flight to the south. This circumstance is considered by us a certain indication of approaching cold weather. The lakes which form our northern and western boundary, are the summer resort of the geese; and they remain there till driven away by the cold.

13*th*. The leaves of the common blackberry, (rubus occidentalis,) turn red. I observed that the leaves of a small buttonwood tree had changed to yellow, while those on a larger tree remained green. From this one might be led to conclude that large trees retain the colour of their leaves longer than small ones. The first change of this kind certainly takes place in small shrubs or herbs.

A tortoise was seen crossing the path in the woods; from this I suppose that when at liberty, that animal does not retire for the winter so soon as when confined. (See *Sept*. 27*th*.)

14*th*. The leaves of the Athenian Poplar turn yellow; this tree was small.

16*th*. We had a severe frost this evening; this, though not the first, is by far the heaviest. The observation on the Blue Bird made on the 9th instant, should be inserted *here*, as I heard one this morning.

The Locust, (gleditsia,) turns yellow. There appears to be a great coincidence in the discolouration of the leaves of

the following trees; and the beauty of our forest at this season, owing to this circumstance, is not equalled by its appearance at any other time of the year.

White Ash—leaves turn bright yellow.
White Oak—leaves, dark orange.
Black Oak—reddish-brown.
Hickory—pale yellow.
Maple—light red.

24th. The weather, for a day or two past, has been remarkably mild. I heard the little Blue Bird in the air, and the grasshopper among the low plants. The Catydids chirped on the trees, and the old tortoise dragged himself from his winter retreat to crawl in the sunshine.

As a person was walking in a field just back of my study, and through which there was a small stream of water, a large bird alighted on the ground, within a few yards of him. On approaching the bird he ruffled his feathers, and made a show of resistance; he exhibited no signs of fear, and permitted himself to be taken. When he was brought to me he was quite furious, and struck at me with his bill, though at some distance from him. I looked him steadily in the eyes, and this seemed to provoke him exceedingly. He is a species of Bittern, and comes very near the Ardea Stellaris, of Linné. The Bittern is only occasionally seen in this part of New-Jersey, and never remains more than a day or two on his return from northern latitudes to milder climates.

25th. The weather has become damp and cold; the tall Lombardy Poplar changes the colour of its leaves yellow, while those which were lopped last October, are still green. This verifies the remark of the Rev. G. White, that lopped trees, while their heads are young, carry their leaves a long time.

Quere:—Is there any thing in the vulgar proverb, that "Cocks crow for Christmas?" I think they certainly crow earlier about this time of the year, than during the summer months. Probably this is occasioned by the evening commencing sooner.

There was an unusual number of worms and crawling insects of every description last spring and summer. On the summer preceding, there was an unusual drought, which perhaps was the cause of the death of vast numbers of toads, who live upon these animals; it is certainly a fact that we had but few toads this year.

27th. Cherry trees become red.
Apple trees become yellow.

29th. This morning I found ice made in the tubs, the thickness of half a dollar. I saw the Blue Birds flying about the fences, and the little yellow butterfly skimming along the road.

Nov. 8th. After some cold weather, we have had a few pleasant days. I have seen a large moth hovering about at night; and a red, brown, and white butterfly, during the day. The old tortoise has also left his winter retreat.

17th. This morning we had a storm of hail. The hailstones were very small.

20th. The leaves of the weeping willow are yet green. This is among the first trees which show signs of vegetation, and it is also the last. Though not an invariable rule, it commonly happens, I think, that those plants which vegetate first, retain their leaves the longest. It is to be expected that those plants which are hard enough to bud during the cold of the spring, would remain longest uninjured by the severities of winter, as I have before remarked.

From this period to the close of the year, nothing remarkable has occurred—

"IN RESE VERTITUR ANNUS."

THE LION.

[Concluded from page 36.]

Mr. Burchell, as we may learn from the foregoing extract, is not inclined to maintain the courage of the African Lion, whatever impression he may have had of his extraordinary physical strength. The natural habits of the Lion are certainly those of treachery; he is not disposed, under any circumstances, to meet his prey face to face; and he is particularly unwilling to encounter man when he crosses him in the full blaze of day. The inability of his eye, (in common with most others of the cat tribe,) to bear a strong light, may account, in a great degree, for this circumstance, which has probably brought upon him much of the reproach of being a skulking, cowardly animal. But we apprehend that there were periods in the history of African colonization, when the Lion was of a bolder nature in his encounters with mankind; that the dread of fire-arms has become, in some degree, a habit of the species; and that he has sagacity, or hereditary instinct, to know that a flash and a loud sound is often followed by a speedy death or a grievous injury. One of the most remarkable examples of the audacity of a Lion, is to be found in the Journal of a Settler at the Cape, more than a century ago. The first settlement of the Dutch at Cape Town, was in the year 1652: the site which they selected was on the southern edge of Table Bay, and the number of the settlers amounted only to a hundred persons. In half a century the colonists had greatly increased,

and had driven the native Hottentots a considerable distance into the interior, amongst dry and barren tracts. This is the ordinary course of colonization. In 1705, the Landdrost, (a local magistrate,) Jos. Sterreberg Kupt, proceeded on a journey into the country, to procure some young oxen for the Dutch East India Company; and he has left a very interesting Journal of his expedition, which has been translated from the original Dutch, and published by the Rev. Dr. Philip in his truly valuable Researches in South Africa. The account which the Landdrost gives of the adventure of his company with a Lion, is altogether so curious, that we extract it without abridgment:—

"Our wagons, which were obliged to take a circuitous route, arrived at last, and we pitched our tent a musket-shot from the kraal; and after having arranged every thing, went to rest, but were soon disturbed; for, about midnight, the cattle and horses which were standing between the wagons, began to start and run, and one of the drivers to shout, on which every one ran out of the tent with his gun. About thirty paces from the tent stood a Lion, which, on seeing us, walked very deliberately about thirty paces farther, behind a small thorn-bush, carrying something with him, which I took to be a young ox. We fired more than sixty shots at that bush, and pierced it stoutly, without perceiving any movement. The southeast wind blew strong, the sky was clear, and the moon shone very bright, so that we could perceive every thing at that distance. After the cattle had been quieted again, and I had looked over every thing, I missed the sentry from before the tent, Jan Smit, from Antwerp, belonging to the Groene Kloof. We called as loudly as possible, but in vain—nobody answered; from which I concluded that the Lion had carried him off. Three or four men then advanced very cautiously to the bush, which stood right opposite the door of the tent, to see if they could discover any thing of the man, but returned helter-skelter, for the Lion, who was there still, rose up, and began to roar. They found there the musket of the sentry, which was cocked, and also his cap and shoes.

"We fired again about a hundred shots at the bush, (which was sixty paces from the tent, and only thirty paces from the wagons, and at which we were able to point as at a target,) without perceiving any thing of the Lion, from which we concluded that he was killed, or had run away. This induced the marksman, Jan Stamansz, to go and see if he was there still or not, taking with him a firebrand. But as soon as he approached the bush, the Lion roared terribly, and leapt at him, on which he threw the firebrand at him, and the other people having fired about ten shots, he retired directly to his former place behind that bush.

"The firebrand which he had thrown at the Lion, had fallen in the midst of the bush, and, favoured by the strong south-east wind, it began to burn with a great flame, so that we could see very clearly into and through it. We continued our firing into it; the night passed away, and the day began to break, which animated every one to aim at the Lion, because he could not go from thence without exposing himself entirely, as the bush stood directly against a steep kloof. Seven men, posted on the farthest wagons, watched him to take aim at him if he should come out.

"At last, before it became quite light, he walked up the hill with the man in his mouth, when about forty shots were fired at him, without hitting him, although some were very near. Every time this happened, he turned round towards the tent, and came roaring towards us; and I am of opinion, that if he had been hit, he would have rushed on the people and the tent.

"When it became broad day-light, we perceived, by the blood, and a piece of the clothes of the man, that the Lion had taken him away, and carried him with him. We also found behind the bush, the place where the Lion had been keeping the man, and it appeared impossible that no ball should have hit him, as we found in that place several balls beaten flat. We concluded that he was wounded, and not far from this. The people, therefore, requested permission to go in search of the man's corpse, in order to bury it, supposing that, by our continual firing, the Lion would not have had time to devour much of it. I gave permission to some, on condition that they should take a good party of armed Hottentots with them, and made them promise that they would not run into danger, but keep a good look out, and be circumspect. On this seven of them, assisted by forty-three armed Hottentots, followed the track, and found the Lion about half a league farther on, lying behind a little bush. On the shout of the Hottentots he sprang up and ran away, on which they all pursued him. At last, the beast turned round, and rushed, roaring terribly, amongst the crowd. The people, fatigued and out of breath with their running, fired and missed him, on which he made directly towards them. The captain, or chief head of the kraal, here did a brave act in aid of two of the people whom the Lion attacked. The gun of one of them missed fire, and the other missed his aim, on which the captain threw himself between the Lion and the people so close, that the Lion struck his claws into the caross (mantle) of the Hottentot. But he was too agile for him, doffed his caross, and stabbed him with an assagai. Instantly, the other Hottentots hastened on, and adorned him with their assagais, so that he looked like a porcupine. Notwithstanding this, he did not leave off roaring and leaping, and bit off some of the assagais, till the marksman,

Jan Stamansz fired a ball into his eye, which made him turn over, and he was then shot dead by the other people. He was a tremendously large beast, and had but a short time before carried off a Hottentot from the kraal, and devoured him."

Mr. Pringle, who had extraordinary opportunities of observing the habits of the half-civilized natives of Southern Africa, and of becoming acquainted with the characteristics of the wild beasts with which that part of the world abounds, has given us a very good description of the Lion hunt, in which he and several of his countrymen, all somewhat inexperienced in such adventures, was engaged. Mr. Pringle was a settler on the eastern frontier of the Cape Colony; and in 1822 was residing on his farm, or "location," at Bavian's River. We should deprive his account of a Lion hunt of its interest, if we attempted to give it in any other than his own words:—

"One night a Lion, that had previously purloined a few sheep out of my kraal, came down and killed my riding horse, about a hundred yards from the door of my cabin. Knowing that the Lion, when he does not carry off his prey, usually conceals himself in the vicinity, and is very apt to be dangerous, by prowling about the place in search of more game, I resolved to have him destroyed or dislodged without delay. I therefore sent a messenger round the location, to invite all who were willing to assist in the enterprise, to repair to the place of rendezvous as speedily as possible. In an hour every man of the party, (with the exception of two pluckless fellows who were kept at home by the women,) appeared ready mounted, and armed. We were also reinforced by about a dozen of the 'Bastaard' or Mulatto Hottentots, who resided at that time upon our territory as tenants, or herdsmen,—an active and enterprising, though rather an unsteady race of men. Our friends, the Tarka boors, many of whom are excellent Lion hunters, were all too far distant to assist us—our nearest *neighbours*, residing at least twenty miles from the location. We were, therefore, on account of our own inexperience, obliged to make our Hottentots the leaders of the chase.

"The first point was to track the Lion to his covert. This was effected by a few of the Hottentots, on foot. Commencing from the spot where the horse was killed, they followed the *spoor** through grass, and gravel, and brushwood, with astonishing ease and dexterity, where an inexperienced eye could discern neither footprint nor mark of any kind,—until, at length, we fairly tracked him into a large *bosch*, or straggling thicket of brushwood and evergreens, about a mile distant.

"The next object was to drive him out of this retreat, in order to attack him in close phalanx, and with more safety and effect. The approved mode in such cases is to torment him with dogs till he abandons his covert, and stands at bay in the open plain. The whole band of hunters then march forward together, and fire deliberately, one by one. If he does not speedily fall, and grows angry, and turns upon his enemies, they must then stand close in a circle, and turn their horses rear-outward; some holding them fast by the bridles, while the others kneel to take a steady aim at the Lion as he approaches, sometimes up to the very horses' heels—crouching every now and then, as if to measure the distance and strength of his enemies. This is the moment to shoot him fairly in the forehead, or some other mortal part. If they continue to wound him ineffectually till he waxes furious and desperate; or if the horses, startled by his terrific roar, grow frantic with terror, and burst loose, the business becomes rather serious, and may end in mischief—especially if all the party are not men of courage, coolness, and experience. The frontier boors are, however, generally such excellent marksmen, and withal so cool and deliberate, that they seldom fail to shoot him dead, as soon as they get within a fair distance.

"In the present instance, we did not manage matters quite so scientifically. The Bastaards, after recounting to us all these and other sage laws of Lion hunting, were themselves the first to depart from them. Finding that the few indifferent hounds we had made little impression on the enemy, they divided themselves into two or three parties, and rode round the jungle, firing into the spot where the dogs were barking round him, but without effect. At length, after some hours spent in thus beating about the bush, the Scottish blood of some of my countrymen began to get impatient; and three of them announced their determination to march in and beard the Lion in his den, provided three of the Bastaards, (who were superior marksmen,) would support them, and follow up their fire, should the enemy venture to give battle. Accordingly, in they went, (in spite of the warnings of some more prudent men among us,) to within fifteen or twenty paces of the spot where the animal lay concealed. He was couched among the roots of a large evergreen bush, with a small space of open ground on one side of it; and they fancied on approaching, that they saw him distinctly, lying glaring at them from under the foliage. Charging the Bastaards to stand firm and level fair should *they* miss, the Scottish champions let fly together, and struck—not the Lion, as it afterwards proved—but a great block of red stone, beyond which he was actually lying. Whether any of the shot grazed him is uncertain, but, with no other warning than a furious growl, forth he bolted from the bush. The pusillanimous Bastaards, in place of now pouring in

* The Hottentot name for a footmark.

their volley upon him, instantly turned, and fled helter-skelter, leaving him to do his pleasure upon the defenceless Scots—who, with empty guns, were tumbling over each other, in their hurry to escape the clutch of the rampant savage. In a twinkling he was upon them, and, with one stroke of his paw, dashed the nearest to the ground. The scene was terrific! There stood the Lion, with his foot upon his prostrate foe, looking round in conscious power and pride upon the bands of his assailants—and with a port the most noble and imposing that can be conceived. It was the most magnificent thing I ever witnessed. The danger of our friends, however, rendered it at the moment too terrible to enjoy either the grand or the ludicrous part of the picture. We expected to see one or more of them torn in pieces; nor, though the rest of the party were standing within fifty paces, with their guns cocked and levelled, durst we fire for their assistance. One was lying under the Lion's paw, and the others scrambling towards us in such a way as to intercept our aim at him. All this passed far more rapidly than I have described it. But luckily the Lion, after steadily surveying us for a few seconds, seemed willing to be quits with us on fair terms; and with a fortunate forbearance, (for which he met but an ungrateful recompense,) turned calmly away, and driving the snarling dogs like rats from among his heels, bounded over the adjoining thicket like a cat over a footstool, clearing brakes and bushes twelve or fifteen feet high as readily as if they had been tufts of grass, and, abandoning the jungle, retreated towards the mountains.

"After ascertaining the state of our rescued comrade, (who fortunately had sustained no other injury than a slight scratch on the back, and a severe bruise in the ribs, from the force with which the animal had dashed him to the ground,) we renewed the chase with Hottentots and hounds in full cry. In a short time we again came up with the enemy, and found him standing at bay under an old mimosa tree, by the side of a mountain-stream, which we had distinguished by the name of Douglas Water. The dogs were barking round, but afraid to approach him, for he was now beginning to growl fiercely, and to brandish his tail in a manner that showed he was meditating mischief. The Hottentots, by taking a circuit between him and the mountain, crossed the stream, and took a position on the top of a precipice overlooking the spot where he stood. Another party of us occupied a position on the other side of the glen; and placing the poor fellow between two fires, which confused his attention, and prevented his retreat, we kept battering away at him, till he fell, unable again to grapple with us, pierced with many wounds.

"He proved to be a full grown Lion, of the yellow variety, about five or six years of age. He measured nearly twelve feet from the nose to the tip of the tail. His fore leg, below the knee, was so thick that I could not span it with both hands; and his neck, breast, and limbs, appeared, when the skin was taken off, a complete congeries of sinews."

The Lion, as well as all of the cat tribe, takes his prey at night; and it is necessary, therefore, that he should have peculiar organs of vision. In all those animals which seek their food in the dark, the eye is usually of a large size, to admit a great number of rays; and that part which is called the *choroides* reflects, instead of absorbing the light. The power of seeing in the dark, which the cat tribe possesses, has always appeared a subject of mystery; and it is natural that it should be so, for man himself sees with more difficulty in the dark than any other animal: he has a compensation in his ability to produce artificial light. There were formerly two opinions on the subject of the cat's eye: the one, that the external light only is reflected; the other, that light was generated in the eye itself. Professor Bohn, of Leipsic, made experiments, however, which proved that, when the external light is wholly excluded, none can be seen in the cat's eye; and it is now established that the illumination is wholly produced by the external rays of light, which, after being concentrated by those parts which are called the *cornea*, and the *crystalline lens*, are reflected in a brilliant concave mirror at the bottom of the eye, called the *tapetum*. This effect may be constantly seen in the domestic cat. In the strong light of day, the *iris* is contracted, so that a very small quantity of light is admitted to this mirror; but in the twilight the *iris* opens, and then the mirror being completely exposed, the eye glares in the manner with which we are all familiar. The construction, therefore, of the eye of the cat tribe enables them to collect in one focus whatever rays of light there may be: and few places are so dark but that some light may be found—as we know, when we have gone into a cellar, where the darkness at first appears impenetrable, but where, even with our differently constructed organ of vision, we soon distinguish objects without difficulty. This peculiar eye, therefore, is necessary to the Lion to perceive his prey; and he creeps towards it with a certainty which nothing but this distinct nocturnal vision could give.

Every one must have observed what are usually called the *whiskers*, on a cat's upper lip. The use of these in a state of nature is very important. They are organs of touch. They are attached to a bed of close glands under the skin; and each of these long and stiff hairs is connected with the nerves of the lip. The slightest contact of these

whiskers with any surrounding object is thus felt most distinctly by the animal, although the hairs are themselves insensible. They stand out on each side, in the Lion, as well as in the common cat, so that, from point to point, they are equal to the width of the animal's body. If we imagine, therefore, a Lion stealing through a covert of wood in an imperfect light, we shall at once see the use of these long hairs. They indicate to him, through the nicest feeling, any obstacle which may present itself to the passage of his body; they prevent the rustle of boughs and leaves, which would give warning to his prey if he were to attempt to pass through too close a bush; and thus, in conjunction with the soft cushions of his feet, and the fur upon which he treads, (the retractile claws never coming in contact with the ground,) they enable him to move towards his victim with a stillness greater even than that of the snake, who creeps along the grass, and is not perceived till he has coiled round his prey.—*Lib. Ent. Knowl.*

DRIFTING OF ANIMALS ON FLOATING ISLANDS.

The power of the terrestrial mammalia to cross the sea is very limited, and we have already stated that the same species is scarcely ever common to districts widely separated by the ocean. If there be some exceptions to this rule they generally admit of explanation, for there are natural means whereby some animals may be floated across the water, and the sea sometimes wears a passage through a neck of land, leaving individuals of a species on each side of the new channel. Polar bears are known to have been frequently drifted on the ice from Greenland to Iceland; they can also swim to considerable distances, for Captain Parry, on the return of his ships through Barrow's Strait, met with a bear swimming in the water about midway between the shores, which were about forty miles apart, and where no ice was in sight. "Near the east coast of Greenland," observes Scoresby, "they have been seen on the ice in such quantities, that they were compared to flocks of sheep on a common—and they are often found on field ice above two hundred miles from the shore." Wolves, in the arctic regions, often venture upon the ice near the shore, for the purpose of preying upon young seals, which they surprise when asleep. When these ice-floes get detached, the wolves are often carried out to sea, and though some may be drifted to islands or continents, the greater part of them perish, and have been often heard in this situation howling dreadfully, as they die by famine.

During the short summer which visits Melville Island, various plants push forth their leaves and flowers the moment the snow is off the ground, and form a carpet spangled with the most lively colours. These secluded spots are reached annually by herds of musk-oxen and rein-deer, which travel immense distances over dreary and desolate regions, to graze undisturbed on these luxuriant pastures. The rein-deer often pass along in the same manner, by the chain of the Aleutian Islands, from Behring's Straits to Kamtschatka, subsisting on the moss found in these islands during their passage.

Within the tropics there are no ice-floes; but, as if to compensate for that mode of transportation, there are floating isles of matted trees, which are often borne along through considerable spaces. These are sometimes seen sailing at the distance of fifty or one hundred miles from the mouth of the Ganges, with living trees standing erect upon them. The Amazon, the Congo, and the Orinoco, also produce these verdant rafts, which are formed in the manner already described when speaking of the great raft of the Atchafalaya, an arm of the Mississippi, where a natural bridge of timber, ten miles long, and more than two hundred yards wide, has existed for more than forty years, supporting a luxuriant vegetation, and rising and sinking with the water which flows beneath. That this enormous mass will one day break up and send down a multitude of floating islands to the gulf of Mexico, is the hope and well-founded expectation of the inhabitants of Louisiana.

On these green isles of the Mississippi, observes Malte-Brun, young trees take root, and the pisliar and nenuphar display their yellow flowers; there serpents, birds, and the cayman alligator, come to repose, and all are sometimes carried to the sea, and engulphed in its waters.

In a memoir lately published, a naval officer informs us, that as he returned from China by the eastern passage, he fell in, among the Moluccas, with several small floating islands of this kind, covered with mangrove trees, interwoven with underwood. The trees and shrubs retained their verdure, receiving nourishment from a stratum of soil which formed a white beach round the margin of each raft, where it was exposed to the washing of the waves and the rays of the sun. The occurrence of soil in such situations, may easily be explained, for all the natural bridges of timber which occasionally connect the islands of the Ganges, Mississippi, and other rivers, with their banks, are exposed to floods of water densely charged with sediment.

Captain W. H. Smyth informs us, that when cruizing in the Cornwallis amidst the Philippine Islands, he has more than once seen, after those dreadful hurricanes called typhoens, floating islands of wood, with trees growing upon

RUBY-CROWNED WREN. BLUE JAY.

them, and that ships have sometimes been in imminent peril, in consequence of mistaking them for terra-firma.

It is highly interesting to trace, in imagination, the effects of the passage of these rafts from the mouth of a large river to some archipelago, such as those in the South Pacific, raised from the deep in comparatively modern times, by the operations of the volcano and the earthquake, and the joint labours of coral animals and testacea. If a storm arise, and the frail vessel be wrecked, still many a bird and insect may succeed in gaining, by flight, some island of the newly-formed group, while the seeds and berries of herbs and shrubs, which fall into the waves, may be thrown upon the strand. But if the surface of the deep be calm, and the rafts are carried along by a current, or wafted by some slight breath of air fanning the foliage of the green trees, it may arrive, after a passage of several weeks, at the bay of an island, into which its plants and animals may be poured out as from an ark, and thus a colony of several hundred new species may at once be naturalized.

We may remind the reader, that we merely advert to the transportation of these rafts as of extremely rare and accidental occurrence; but it may account, in tropical countries, for some of the rare exceptions to the general law, of the confined range of species.—*Lyell's Geology.*

RUBY-CROWNED WREN.

SYLVIA CALENDULA.

[Plate VI. Vol. 2. Reduced to half size.]

Le Roitelet Rubis, Buff. v. 373.—Edw. 254.—Lath. *Syn.* II. 511.—*Arct. Zool.* 320.—*Regulus cristatus alter vertice rubini coloris*, Bartram, p. 292.—*Motacilla calendula*, Linn. I. p. 337.—Gmel. *Syst.* I. p. 994.—*Sylvia calendula*, Lath. *Ind. Orn.* p. 549.—*Regulus rubineus*, Vieillot, *Ois. de l'Am. Sept.* pl. 104.—J. Doughty's Collection.

This little bird visits us early in the spring from the south, and is generally first found among the maple blossoms, about the beginning of April. These failing, it has recourse to those of the peach, apple, and other fruit trees, partly for the tops of the sweet and slender stamina of the flowers, and partly for the winged insects that hover among them. In the middle of summer I have rarely met with these birds in Pennsylvania, and as they penetrate as far north as the country round Hudson's Bay, and also breed there, it accounts for their late arrival here in fall. They then associate with the different species of Titmouse, and the Golden-crested Wren; and are particularly numerous in the month of October and beginning of November, in orchards, among the decaying leaves of the apple trees, that at that season are infested with great numbers of small, black winged insects, among which they make great havoc. I have often regretted the painful necessity one is under of taking away the lives of such inoffensive and useful little creatures, merely to obtain a more perfect knowledge of the species, for they appear so busy, so active, and unsuspecting, as to continue searching about the same twig, even after their companions have been shot down beside them. They are more remarkably so in autumn; which may be owing to the great number of young and inexperienced birds which are then among them; and frequently at this season I have stood under the tree, motionless, to observe them, while they gleaned among the low branches, sometimes within a foot or two of my head. They are extremely adroit in catching their prey; have only at times a feeble chirp; visit the tops of the tallest trees, as well as the lowest bushes; and continue generally for a considerable time among the branches of the same tree, darting about from place to place; appearing, when on the top of a high maple, no bigger than humble-bees.

The Ruby-crowned Wren is four inches long, and six in extent; the upper parts of the head, neck and back, are of a fine greenish-olive, with a considerable tinge of yellow; wings and tail, dusky purplish-brown, exteriorly edged with yellow olive; secondaries and first row of wing-coverts edged and tipt with white, with a spot of deep purplish-brown across the secondaries, just below their coverts; the hind head is ornamented with an oblong lateral spot of vermillion, usually almost hid by the other plumage; round the eye a ring of yellowish-white; whole under parts of the same tint; legs dark brown; feet and claws yellow; bill slender, straight, not notched, furnished with a few black hairs at the base; inside of the mouth orange. The female differs very little in its plumage from the male, the colours being less lively, and the bird somewhat less. Notwithstanding my utmost endeavours, I have never been able to discover their nest; though, from the circumstance of having found them sometimes here in summer, I am persuaded that they occasionally breed in Pennsylvania; but I know several birds, no larger than this, that usually build on the extremities of the tallest trees in the woods; which I have discovered from their beginning before the leaves are out; many others, no doubt, choose similar situations; and should they delay building until the woods are thickened with leaves, it is no easy matter to discover them. In fall they are so extremely fat, as almost to dissolve between the fingers as you open them; owing to the great abundance of their favourite insects at that time.—Wilson.

BLUE JAY.

CORVUS CRISTATUS.

[Plate VI. Vol. 2. Reduced to half size.]

Linn. *Syst.* i. p. 106, *No.* 8. *ed.* 10.—*Garrulus canadensis cæruleus*, Briss. ii. p. 55.—*Pica glandaria cristata*, Klein. p. 61, 3.—*Le Geai bleu de l'Amerique Septentrionale*, Buff. iii. p. 120. *Pl. Enl.* 529.—*Blue Jay*, Catesb. *Car.* i. 15.—Edw. 239.—*Arct. Zool.* ii. *No.* 138.—Lath. *Syn.* i. p. 386, 20.—Bartram, p. 290.—J. Doughty's Collection.

This elegant bird, which, as far as I can learn, is peculiar to North America, is distinguished as a kind of beau among the feathered tenants of our woods, by the brilliancy of his dress; and like most other coxcombs, makes himself still more conspicuous by his loquacity, and the oddness of his tones and gestures. The Jay measures eleven inches in length; the head is ornamented with a crest of light blue or purple feathers, which he can elevate or depress at pleasure; a narrow line of black runs along the frontlet, rising on each side higher than the eye, but not passing *over* it, as Catesby has represented, and as Pennant and many others have described it; back and upper part of the neck a fine light purple, in which the blue predominates; a collar of black proceeding from the hind-head, passes with a graceful curve down each side of the neck, to the upper part of the breast, where it forms a crescent; chin, cheeks, throat, and belly, white, the three former slightly tinged with blue; greater wing-coverts a rich blue; exterior sides of the primaries light blue, those of the secondaries a deep purple, except the three feathers next the body, which are of a splendid light blue; all these, except the primaries, are beautifully barred with crescents of black, and tipt with white; the interior sides of the wing feathers are dusky black; tail long and cuneiform, composed of twelve feathers of a glossy light blue, marked at half inches with transverse curves of black, each feather being tipt with white, except the two middle ones, which deepen into a dark purple at the extremities. Breast and sides under the wings a dirty white, faintly stained with purple; inside of the mouth, the tongue, bill, legs, and claws, black; iris of the eye, hazel.

The Blue Jay is an almost universal inhabitant of the woods, frequenting the thickest settlements, as well as the deepest recesses of the forest, where his squalling voice often alarms the deer, to the disappointment and mortification of the hunter; one of whom informed me, that he made it a point, in summer, to kill every Jay he could meet with. In the charming season of spring, when every thicket pours forth harmony, the part performed by the Jay always catches the ear. He appears to be, among his fellow-musicians, what the trumpeter is in a band, some of his notes having no distant resemblance to the tones of that instrument. These he has the faculty of changing through a great variety of modulations, according to the particular humour he happens to be in. When disposed to ridicule, there is scarce a bird whose peculiarities of song he cannot tune his notes to. When engaged in the blandishments of love, they resemble the soft chatterings of a duck; and while he nestles among the thick branches of the cedar, are scarce heard at a few paces distance; but no sooner does he discover your approach, than he sets up a sudden and vehement outcry, flying off, and screaming with all his might, as if he called the whole feathered tribes of the neighbourhood to witness some outrageous usage he had received. When he hops undisturbed among the high branches of the oak and hickory, they become soft and musical; and his calls of the female, a stranger would readily mistake for the repeated creakings of an ungreased wheelbarrow. All these he accompanies with various nods, jerks, and other gesticulations, for which the whole tribe of Jays are so remarkable, that, with some other peculiarities, they might have very well justified the great Swedish naturalist in forming them into a separate genus by themselves.

The Blue Jay builds a large nest, frequently in the cedar, sometimes in an apple-tree, lines it with dry fibrous roots, and lays five eggs, of a dull olive, spotted with brown. The male is particularly careful of not being heard near the place, making his visits as silently and secretly as possible. His favourite food is chesnuts, acorns, and Indian corn. He occasionally feeds on bugs and caterpillars, and sometimes pays a plundering visit to the orchard, cherry-rows, and potatoe-patch; and has been known, in times of scarcity, to venture into the barn, through openings between the weather-boards. In these cases, he is extremely active and silent, and if surprised in the fact, makes his escape with precipitation, but without noise, as if conscious of his criminality.

Of all birds he is the most bitter enemy to the Owl. No sooner has he discovered the retreat of one of these, than he summons the whole feathered fraternity to his assistance, who surround the glimmering *solitaire*, and attack him from all sides, raising such a shout as may be heard, in a still day, more than half a mile off. When in my hunting excursions I have passed near the scene of tumult, I have imagined to myself that I heard the insulting party venting their respective charges with all the virulency of a Billingsgate mob; the owl, meanwhile, returning every compliment with a broad goggling stare. The war

becomes louder and louder, and the owl, at length forced to betake himself to flight, is followed by the whole train of his persecutors, until driven beyond the boundaries of their jurisdiction.

But the Blue Jay himself is not guiltless of similar depredations with the owl, and becomes, in his turn, the very tyrant he detested, when he sneaks through the woods, as he frequently does, and among the thickets and hedgerows, plundering every nest he can find of its eggs, tearing up the callow young by piecemeal, and spreading alarm and sorrow around him. The cries of the distressed parents soon bring together a number of interested spectators, (for birds, in such circumstances, seem truly to sympathize with each other,) and he is sometimes attacked with such spirit, as to be under the necessity of making a speedy retreat.

He will sometimes assault small birds, with the intention of killing and devouring them; an instance of which I myself once witnessed, over a piece of woods, near the borders of Schuylkill; where I saw him engaged for more than five minutes pursuing what I took to be a species of *Motacilla*, wheeling, darting, and doubling in the air, and at last, to my great satisfaction, got disappointed, by the escape of his intended prey. In times of great extremity, when his hoard or magazine is frozen up, buried in snow, or perhaps exhausted, he becomes very voracious, and will make a meal of whatever carrion or other animal substance comes in the way; and has been found regaling himself on the bowels of a robin, in less than five minutes after it was shot.

There are, however, individual exceptions to this general character for plunder and outrage, a proneness for which is probably often occasioned by the wants and irritations of necessity. A Blue Jay, which I have kept for some time, and with whom I am on terms of familiarity, is in reality a very notable example of mildness of disposition, and sociability of manners. An accident in the woods first put me in possession of this bird, while in full plumage, and in high health and spirits; I carried him home with me, and put him into a cage already occupied by a Gold-winged Woodpecker, when he was saluted with such rudeness, and received such a drubbing from the lord of the manor, for entering his premises, that, to save his life, I was obliged to take him out again. I then put him into another cage, where the only tenant was a female Orchard Oriole. She also put on airs of alarm, as if she considered herself endangered and insulted by the intrusion; the Jay, meanwhile, sat mute and motionless on the bottom of the cage, either dubious of his own situation, or willing to allow time for the fears of his neighbour to subside. Accordingly, in a few minutes, after displaying various threatening gestures, (like some of those Indians we read of, in their first interviews with the whites,) she began to make her approaches, but with great circumspection and readiness for retreat. Seeing, however, the Jay begin to pick up some crumbs of broken chesnuts, in a humble and peaceable way, she also descended, and began to do the same; but at the slightest motion of her new guest, wheeled round, and put herself on the defensive. All this ceremonious jealousy vanished before evening, and they now roost together, feed, and play together, in perfect harmony and good humour. When the Jay goes to drink, his messmate very impudently jumps into the water to wash herself, throwing the water in showers over her companion, who bears it all very patiently; venturing now and then to take a sip between every splash, without betraying the smallest token of irritation. On the contrary, he seems to take pleasure in his little fellow-prisoner, allowing her to pick, (which she does very gently,) about his whiskers, and to clean his claws from the minute fragments of chesnuts which happen to adhere to them. This attachment on the one part, and mild condescension on the other, may, perhaps, be partly the effect of mutual misfortunes, which are found not only to knit mankind, but many species of inferior animals, more closely together; and shows that the disposition of the Blue Jay may be humanized, and rendered susceptible of affectionate impressions, even for those birds, which, in a state of nature, he would have no hesitation in making a meal of.

He is not only bold and vociferous, but possesses a considerable talent for mimicry, and seems to enjoy great satisfaction in mocking and teasing other birds, particularly the little hawk, (*F. sparverius*,) imitating his cry wherever he sees him, and squealing out as if caught; this soon brings a number of his own tribe around him, who all join in the frolic, darting about the hawk, and feigning the cries of a bird sorely wounded, and already under the clutches of its devourer, while others lie concealed in bushes ready to second their associates in the attack. But this ludicrous farce often terminates tragically. The hawk singling out one of the most insolent and provoking, sweeps upon him in an unguarded moment, and offers him up a sacrifice to his hunger and resentment. In an instant the tune is changed; all their buffoonery vanishes, and loud and incessant screams proclaim their disaster.

Wherever the Jay has had the advantage of education from man, he has not only shown himself an apt scholar, but his suavity of manners seems equalled only by his art and contrivances; though it must be confessed that his itch for thieving keeps pace with all his other acquirements. Dr. Mease, on the authority of Col. Postell, of South Carolina, informs me, that a Blue Jay, which was

brought up in the family of the latter gentleman, had all the tricks and loquacity of a parrot; pilfered every thing he could conveniently carry off, and hid them in holes and crevices; answered to his name with great sociability, when called on; could articulate a number of words pretty distinctly; and when he heard any uncommon noise or loud talking, seemed impatient to contribute his share to the general festivity, (as he probably thought it,) by a display of all the oratorial powers he was possessed of.

Mr. Bartram relates an instance of the Jay's sagacity, worthy of remark. "Having caught a Jay in the winter season," says he, "I turned him loose in the green-house, and fed him with corn, (zea, maize,) the heart of which they are very fond of. This grain being ripe and hard, the bird at first found a difficulty in breaking it, as it would start from his bill when he struck it. After looking about, and as if considering for a moment, he picked up his grain, carried and placed it close up in a corner on the shelf, between the wall and a plant-box, where being confined on three sides, he soon effected his purpose, and continued afterwards to make use of this same practical expedient. The Jay," continues this judicious observer, "is one of the most useful agents in the economy of nature, for disseminating forest trees, and other ruciferous and hard-seeded vegetables on which they feed. Their chief employment during the autumnal season, is foraging to supply their winter stores. In performing this necessary duty, they drop abundance of seed in their flight over fields, hedges, and by-fences, where they alight to deposit them in the post-holes, &c. It is remarkable what numbers of young trees rise up in fields and pastures after a wet winter and spring. These birds, alone, are capable, in a few years time, to replant all the cleared lands."

The Blue Jays seldom associate in any considerable numbers, except in the months of September and October, when they hover about in scattered parties of from forty to fifty, visiting the oaks, in search of their favourite acorns. At this season they are less shy than usual, and keep chattering to each other in a variety of strange and querulous notes. I have counted fifty-three, but never more, at one time; and these generally following each other in straggling irregularity from one range of woods to another. Yet we are told by the learned Dr. Latham, and his statement has been copied into many respectable European publications, that the Blue Jays of North America "often unite into flocks of twenty thousand at least! which alighting on a field of ten or twelve acres, soon lay waste the whole." If this were really so, these birds would justly deserve the character he gives them, of being the most destructive species in America. But I will venture the assertion, that the tribe *Oriolus phœniceus*, or red-winged Blackbirds, in the environs of the river Delaware alone, devour and destroy more Indian corn than the whole Blue Jays of North America. As to their assembling in such immense multitudes, it may be sufficient to observe, that a flock of Blue Jays of twenty thousand, would be as extraordinary an appearance in America, as the same number of Magpies or Cuckoos would be in Britain.

It has been frequently said, that numbers of birds are common to the United States and Europe; at present, however, I am not certain of many. Comparing the best descriptions and delineations of the European ones with those of our native birds, said to be of the same species, either the former are very erroneous, or the difference of plumage and habits in the latter, justify us in considering a greater proportion of them to be really distinct species. Be this, however, as it may, the Blue Jay appears to belong exclusively to North America. I cannot find it mentioned by any writer or traveller among the birds of Guiana, Brazil, or any other part of South America. It is equally unknown in Africa. In Europe, and even in the eastern parts of Asia, it is never seen in its wild state. To ascertain the exact limits of its native regions would be difficult. These, it is highly probable, will be found to be bounded by the extremities of the temperate zone. Dr. Latham has indeed asserted, that the Blue Jay of America is not found farther north than the town of Albany. This, however, is a mistake. They are common in the eastern states, and are mentioned by Dr. Belknap in his enumeration of the birds of New-Hampshire. They are also natives of Newfoundland. I myself have seen them in Upper Canada. Blue Jays and Yellow-birds were found by Mr. M'Kenzie, when on his journey across the continent, at the head waters of the Unjigah, or Peace River, in N. lat. 54°, W. long. 121°, on the west side of the great range of Stony Mountains. Steller, who in 1741 accompanied captain Behring in his expedition for the discovery of the north-west coast of America, and who wrote the journal of the voyage, relates, that he himself went on shore near Cape St. Elias, in N. lat. 58° 28′ W. long. 141°46′, according to his estimation, where he observed several species of birds *not known in Siberia;* and one, in particular, described by Catesby under the name of the Blue Jay. Mr. William Bartram informs me, that they are numerous in the peninsula of Florida, and that he also found them at Natchez on the Mississippi. Captains Lewis and Clark, and their intrepid companions, in their memorable expedition across the continent of North America to the Pacific Ocean, continued to see Blue Jays for six hundred miles up the Missouri. From these accounts it follows, that this species occupies, generally or partially, an extent of country stretching upwards of seventy degrees from east to

west, and more than thirty degrees from north to south; though, from local circumstances, there may be intermediate tracts in this immense range, which they seldom visit.—*Ib.*

ODE TO MAY.

BY CHARLES WEST THOMSON.

I.

THE winter is past and the rain is o'er,
The flowers appear on the earth once more—
And Nature from icy fetters free,
Starts into life, and song and glee—
There's a gentle breeze comes over the land,
From the warm south-west by the Zephyrs fann'd,
And the frosts arouse when they hear the sound,
And commence their march, for the Arctic bound—
A genial softness spreads o'er the scene,
And the hills begin to resume their green,
And from the sunny realms of day
Comes fleet o'er the mountains the lovely May.

II.

At her approach the earth awakes,
And puts her rosy garment on,
And from her hand of beauty shakes
Sweet dew-drops o'er the smiling lawn.
The primrose peeps from its lowly bed,
And the fern is bright on the far-spread heath,
And the cowslip is crushed beneath your tread,
As you search the meadow to bind a wreath.
The young leaves burst from the dark gray trees,
Like youth and age together entwined,
And spreading their petals to court the breeze,
Soon cover with beauty the mossy rind—
The cherry tree stands like a ghost in the wood,
Enveloped in blossoms as white as snow,
While numberless others their forms obtrude,
All cover'd with leaves of a crimson glow.

III.

Now from the hills—the sunny hills—
Come bounding down the mountain rills,
With laughter rude and revelry,
Like young fawns, joying to be free
From the ice-prison where they lay,
While winter o'er the land had sway.
From the deep fountains where, unseen,
They crept the rugged roots between,
They come with gay and gallant bound,
To irrigate and bless the ground;
Cheering the woods with pleasant chimes,
That tell of balmy summer times,

When heaven is bright and earth is gay,
And clouds and storms have passed away—
That tell of peaceful moon-light eves,
With soft winds rustling in the leaves,
And odours that ascend above,
And tranquillize the soul to love.

IV.

The sun from his orient chamber
Comes early to drink the dew,
And spreads his bright rays, like clear amber,
On forest and mountain blue—
All Nature looks gay at his coming,
The mists roll away from the hills,
And insects are cheerily humming,
In tune with the murmuring rills;
The cattle in quietness going,
To the meadows are winding their way,
And utter their joyous lowing,
To welcome the coming of May.

V.

But hark! the voice of melody, that breaks
In gushing fulness from the shady grove,
Where the wild warbler of the woodland wakes
Once more his song of harmony and love;
The lively blackbird and the plaintive dove,
The jay—the lark, and all the numerous train
That haunt the earth below or air above,
All send their varied notes of joy again,
Glad to resume the woods, from wandering o'er the main.

And when the first gay tint of morn is seen,
Fringing with ruddy light the orient cloud,
Amid the forest shades and alleys green,
O how they greet the skies with clamours loud—
And when the evening sun, in glory proud,
Sinks to his gorgeous rest and shuts the day,
Thro' the calm twilight how the happy crowd
Twitter on restless wing from spray to spray,
Without a grief to mar the bliss that lights their way.

VI.

Hail, gentle May! the rosy queen of flowers,
Mistress of silent dew, and pearly showers,
Whose step, in freshness, on the verdant lawn,
Tells that the winter's rage is past and gone,
Thee we re-welcome to the woods and vales,
The ambrosial gardens, and the hedgy dales—
The uplifted mountains joy when thou hast smiled
Along their dark ravines and dingles wild;
And the fair valleys laugh when thou art seen
Spreading about their plains thy mantle green—
The lowing cattle on a thousand hills,
With new delight thy balmy presence fills,—
The warbling birds, that sport from tree to tree,
Sing their wild songs of happiness to thee—

And even things inanimate—the streams
And flowers—seem to own their pleasant dreams.
Man, too, his heart with rapture sweetly filled,
Feeling fresh life thro' all his frame distilled,
Blessing the hand that bids thee gaily bound
Through Nature's fields to strew thy joys around,
Looks o'er the land, delightfully serene,
Where human passions have not marred the scene,
And seeing all in tranquil beauty gay,
Hails the fair queen of Nature, rosy May!

From the New-England Galaxy.

SOME PASSAGES FROM THE DIARY OF A SPORTSMAN.

[Continued from page 42.]

I AM convinced from long observation, that persons who live on or near the sea-board of New-England, are more prone to wage war against the wild fowl which frequent the salt marshes and sea beach, than the birds which are found only in the woods. There are periods of the year when wood game and sea game may be found in equal abundance, and at such times I have remarked, that while the woods are undisturbed, save by an occasional report, the sea-shore is fairly besieged with gunners, and a constant discharge of musquetry maintained. The more scientific and fastidious Sportsman, however, prefers to take his chance against a solitary wood-bird, and confines his skill to the partridge, snipe, quail, woodcock, and that magnificent bird, which is found only in lonely and uncultivated moors, the Grouse. But the great body of sportsmen, the militia of gunners, if I may so speak, press eagerly toward the sea, and carry on a most destructive warfare against the goose, the coot, the teal, the yellow-leg and gray-back plover, the gray and black duck, the widgeon, curlew, the dipper, the doe-bird, and the keen-eyed and strong-winged loon. So also the younger class of these water-shooters practice their boyish skill upon the querulous little peep, the brown-back, ring-neck, *et id omne genus*, not the least illustrious of which is that strange and solitary bird, which the boys have baptised with a very significant name, in allusion to its awkward habit of continually bobbing up and down, with the ill grace of a village posture-master.

There is, it must be acknowledged, a world of enjoyment in pursuing these wanderers of the deep, from beach to beach, or in invading the enemy on their own element, by tossing about upon the rolling billow, in a mere shell, no bigger than a fairy's barge. There is something in the very sound and sight of the great sea itself,—something in the roar of the perpetual surge, in the flash of the breaking billow, that leads the step with an irresistible influence to its borders, and fills the mind with an engrossing charm, which no time or change can dissolve. Whenever my foot presses that white and sandy floor, which is washed by the clear billow of the sea, there is communicated to my footstep the elasticity, to my body the vigour, to my mind the joy and exhilaration of the free-born Highlander, when his tartan is fluttering in the wild breeze of his own mountain land, and his foot is on the heather of its own native hills. As I enter upon that bright and golden border, which seems to extend without limit, along the edge of the ocean; as I glance upon the multitudinous billows, which race up its shelving bosom, and then with a musical ripple retire into their bed again; as I gaze abroad upon the expanded main itself, crested with uncounted billows, covered with a thousand passing sails, and traversed by a thousand snowy pinions, I cannot but feel an exultation which the world cannot give, and which, for a time, the world cannot take away.

Gentle reader, did you ever shoot a Peep? In all probability you will confess that your earliest essays with the gun, were directed against that numerous and diminutive species of game. Wherever there is a small patch of salt marsh, or a little pool deserted by the tide, you are sure to meet a detachment of some half-score of those winged rovers, and if you will only tread lightly, you may slay or make captive the whole party. If your fire destroys but one-half, the remainder of the thoughtless creatures, after revolving for a few moments in the air, and raising a shrill scream of lamentation, will drop down into their former position, to look after their fellows, and thus become an easy prey to you. But the grown-up Sportsman, of course, disdains to notice such pigmy pinions, but leaves them to be picked off by the small birding piece of his younger brother. We remember the day, when we toiled mile after mile, over rock, bush, and briar, through mud, and quaking quagmires, and yielding marshes, till the evening came suddenly upon us in the midst of a dreary desert, far distant from our home. We had taken but few victims to console us for our fatigue. For they contrived to baffle all our cunning, and whenever we had crept sufficiently near for a shot, and when in the very act of kneeling, that the execution might be the more destructive, away they would all scamper, uttering in triumph their provoking whistle. It is their habit to alight in a body, and if the shooter fires instantly, and before they have had time to disperse in pursuit of their food, the whole flock may be disposed of at a shot. We availed ourself of seve-

ral such opportunities, but we had in our pouch nothing but some enormous geese shot, which, to be sure, knocked them about right and left, but caused them no farther damage than the fright, for lo! they would all scramble up again, and make off with what speed they might. Here are some verses addressed by a poet to the little bird we have spoken of.

Thou little bird, thou dweller by the sea,
Why takest thou its melancholy voice?
Why with that boding cry
O'er the waves dost thou fly?
O, rather, bird, with me
Through the fair land rejoice!

Thy flitting form comes ghostly dim and pale,
As driven by a beating storm at sea;
Thy cry is weak and scared,
As if thy mates had shared,
The doom of us. Thy wail—
What does it bring to me?

Thou call'st along the sand, and haunt'st the surge,
Restless and sad; as if, in strange accord
With motion and with roar
Of waves that drive to shore,
One spirit did ye urge—
The mystery—the Word,

Of thousands thou, both sepulchre and pall,
Old Ocean art! A requiem o'er the dead,
From out thy gloomy cells,
A tale of mourning tells—
Tells of man's wo and fall,
His sinless glory fled.

Then turn thee, little bird and take thy flight,
Where the complaining sea shall sadness bring
Thy spirit never more.
Come quit with me the shore,
For gladness and the light,
Where birds of summer sing.

The two most stately species of all the feathered tribe which frequent our shores, are the Whooping Crane, and the Great Heron. The former haunts immense sandy flats, salt marshes, desolate swamps, and open morasses, in the neighbourhood of the sea. We have seen them repeatedly on the sea-beach, stalking about in quest of the marine worms upon which they feed, or standing perfectly motionless upon some black rock, watching patiently for their prey. The former is a most melancholy and unsocial creature, and resembles in its habits and life some members of the human family, who separate themselves from the companionship of their fellow-men, and consume their existence in solitude and seclusion, among the unfrequented hills. It is a very shy, and sharp-sighted bird, and the shooter is rarely allowed to approach it on the marsh, within musket range. I have, however, at the edge of a wet and misty evening, when the heavy shadows that fall around, allow but a narrow horizon, stumbled unexpectedly upon it, and killed it before it could take wing. It is a clumsy bird, and rises with difficulty, and trailing its long legs behind it, moves with a heavy and awkward flight. After describing a few very broad circles in the air, and reconnoitering the shores for many miles, it slowly alights again, at a great distance from its pursuer. It utters at the same time a clear and not unmusical cry, which may be heard for a mile or more over the solitary marsh. The Heron, though not uncommon with us, builds and breeds only in the gloomy solitudes of the vast cedar and cypress swamps of the South. Like the Crane, it stands like a motionless sentinel on the sea-shore, or at the edge of a pond or river, watchful for its prey, which it transfixes with its powerful bill, with the speed and accuracy of an arrow. It often follows up the course of creeks and rivers, rioting upon the multitudes of fish, frogs, reptiles, and insects, which swarm around their borders. This bird though very timid, and easily alarmed, is, when wounded, of a most obstinate and ferocious nature, and we would caution all youthful gunners against approaching too near at such times, for one blow of his spear-like bill, would be "excessively disagreeable." A young sportsman once persuaded a little cur dog which followed him, to attack one of these birds which he had crippled, but Mr. Heron so pegged away at poor Tray, that the latter was happy to back out of the scrape with life. I once wounded and brought to the ground an immense crow, which was soaring over my head, and which a small cur animal who had persisted in tagging behind me the whole day, seized upon in an instant, but was glad to release again. Mr. Croaker upon being assaulted in this rude manner, coolly flung itself upon its back, and fastening its long crooked claws in the neck of the dog, hammered away upon his head, till the animal was fairly bewildered. The beak of the bird had nearly gouged his eyes from his head. The moment the bird was released, he managed to raise himself from the ground, and make off. I had a fair race for him, (my gun having been discharged,) for a good half mile, without gaining or losing a foot of ground, till at length he reached a thick wood and escaped. I aimed several blows at him with the breach of my gun, during the chase, all of which he contrived to elude.

Our own widely extended shore, indented with its broad bays, inlets and creeks, abounds with a thousand varieties of rare and beautiful water-fowl. Among these may be enumerated the black or surf duck, the blue-winged teal, the brant, occasionally the canvas-back duck, the golden-

eye, the gooseander, the green-winged teal, the harlequin duck, the long-billed curlew, the richly coloured mallard, the rare red-headed duck, the yellow-winged gadwale, the diver or fisher duck, the dusky duck, the sooty tern, the goose, and various species of plover. All these, and others of equal beauty and delicacy, may be found by the eager sportsman soaring around our shores, or by the no less eager *gourmand*, smoking upon the boards of our friends Boyden, Graham, Hunt, and Malfa. It is hard to determine whether they are more delightful to the eye when rocking on the rolling billow, traversing the empty fields of air, or served up with pickles and oysters, flanked with a bottle or two of ———'s most particular, from the right binn in the cellar. But the true sportsman should be able to look with a cold eye upon all such epicurean dainties. An ounce of bread, and a cup of water, (dashed with a sprinkling of the choicest Irish or Columbian,) should content his simple palate. Let him adopt for a motto this scrap from a beautiful ode of Horace.

Premant Calena falce, quibus dedit
Fortuna vitem; dives et aureis
Mercator exsiccet culullis
Vina, Syra reparata merce,
Dis carus ipsis, quippe ter et quater
Anno revisens æquor Atlanticum
Impune. Me pascunt Olivæ,
Me chichorea levesque Olivæ.
Frui paratis et valido mihi,
Latoe, dones, et, precor, integra
Cum mente; nec turpem senectam
Degere, nec cithara carentem.

But since the days of the Latin bard, even the "*Olivæ*" have been esteemed by the capricious tastes of man as the highest luxury, therefore the frugal sportsman may substitute for it whatever unsophisticated dish he pleases.

M.

From the London Sporting Magazine.

STANZAS TO MY HORSE.

BY BULWER.

Come forth, my brave steed! the sun shines on the vale,
And the morning is bearing its balm on the gale—
Come forth my brave steed, and brush off as we pass,
With the hoofs of thy speed, the bright dew from the grass.

Let the lover go warble his strains to the fair—
I regard not his rapture, and heed not his care;
But now, as we bound o'er the mountain and lea,
I will weave, my brave steed, a wild measure to thee.

Away and away!—I exult in the glow
Which is breathing its pride to my cheek as we go;
And blithely my spirit springs forth—as the air
Which is waving the mane of thy dark flowing hair.

Hail, thou gladness of heart! and thou freshness of soul!
Which have never come o'er me in pleasure's control—
Which the dance and the revel, the bowl and the board,
Tho' they flush'd, and they fever'd, could never afford.

In the splendour of solitude speed we along,
Through the silence but broke by the wild linnet's song;
Not a sight to the eye—not a sound to the ear—
To tell us that sin and that sorrow are near.

Away—and away—and away then we pass,
The blind mole shall not hear thy light hoof on the grass;
And the time which is flying, whilst I am with thee,
Seems as swift as thyself—as we bound o'er the lea.

THE LION AND THE BEAR.

We were yesterday, (22d March,) informed that on Tuesday last a Bear was taken to the Menageric now exhibiting in this city, and let down into the cage of an African Lion, twenty-four years of age, with the belief that it would be immediately torn to pieces. Many people assembled under the awning which encompasses the exhibition to witness the scene, but all were disappointed and struck with astonishment; for although the Bear, so soon as he had reached the bottom of the cage, placed himself in a fighting position, and once or twice flew at the Lion, with the apparent intention of commencing the battle, the Lion did not attempt to injure it, but on the contrary, after some time had elapsed, placed his paw on the Bear's head as if to express its pity for its helpless situation, and evinced every disposition to cultivate friendship.

Having heard and read much of the Lion's nobleness of disposition, and understanding that the Bear was still in the cage, prompted by curiosity, we visited the Menagerie this morning, and actually saw them together. The manager of the Lion tells us that since the Bear has been put into the cage no person has dared to approach it, and that the Lion had not slept for three hours, but continues constantly awake to guard his weaker companion from danger. The Lion, says the manager, suffers the Bear to eat of whatever is thrown into the cage until he has enough, but will scarcely touch food himself.

During the time that we remained, the Lion once or twice walked to the end of the cage opposite to that at which the Bear was lying, and some person motioned

his hand towards the Bear, but so soon as the Lion saw it, he sprang to the Bear, and kept his head resting over it for some time: he has so fatigued himself with watching, that as soon as he lies down he falls asleep, but awakens again at the first noise that is made, and springs to the object of his care.

This seems to us astonishing indeed, and will no doubt attract the notice of naturalists.—*N. Orleans Emporium.*

INSTRUCTIONS TO YOUNG SPORTSMEN.

No. II.

Having now gone through the necessary requirements to familiarize yourself with your gun, as laid down in my instructions, No. I. you may enter the field in search of game; but before we prosecute our excursion, it will be necessary here to make some remarks on your dress, accoutrements, manner of loading, and ammunition.

In these respects I differ, more or less, from most authors, especially English writers, who in the articles of dress recommend shoes, gaiters, and hunting coats with large pockets. As the latter are worn and recommended by many Sportsmen, I will analyze some of their properties, and see whether there is any thing else to recommend them, but *because they are styled hunting coats, and others wear them.* This description of coat, from the immense size of the pockets, is intended to supersede a game-bag;—my objections to it are, the size of the coat, the inconvenience of the large pockets, and the slovenly appearance of the wearer.

This country so abounds with thickets, and other places difficult of access under the best circumstances, in which game always seek refuge, that a superfluity of clothing should be avoided. Then it will be found that the huge pockets, (more like saddle-bags,) will, if filled with game, hang dangling about your knees, and retard your progress much,—or, should the high grass or bushes be wet, from rain or dew, the intolerable chafing of the thighs consequent to this unwieldy coat, will render it a grievous burden, all of which might be avoided by a more tidy and compact dress. English Sportsmen may adopt the usages of their own country, while residing among us, as it respects the sporting *materiel;* but in regard to myself, I would wear and recommend to others, the following:—Boots and pantaloons, and roundabout jacket with standing collar, made of some strong fabric suitable to the season, and a cap. The accoutrements necessary are a game-bag, powder-flask of Sykes' patent, to contain half a pound, and a single shot-bag, with spiral spring charge, to contain four pounds of shot—this, in all conscience, is, or *ought* to be, sufficient for one day's hunt. A man who would shoot more than four pounds of shot in one day at the ordinary ground game, does not deserve the name of Sportsman; this quantity will make fifty charges, and if a greater number than this is used at game, the shooter must either kill an undue proportion, or miss so frequently, as to make him unworthy of the title; for I hold it as a principle, that no one who is desirous of being considered a man of feeling, should kill more game than may be used for the table,—and him who does not kill once out of every two shots he makes, falls far short of that, which in my view, constitutes a Sportsman. It is not to be understood, that I am now speaking of the learner; it is expected that *he* will miss, and that very often, but I wish to impress on his mind how far he may go, and in what proficiency he may consider himself a Sportsman.

The advantages of the dress which I recommend, are its compactness, so as not to interfere with other objects—the comfort, greater neatness, and sportsmanlike appearance of the wearer; and when he wishes either to rest himself, or partake of refreshment in the house or field, he can divest himself of the game-bag and other articles, and thus be released of a tiresome load at once, and thereby feel light and airy; but him that wears a hunting coat cuts at all times the same ludicrous figure, with his huge pockets filled, and the only plan remains for him is, either to take off his coat, or the game from his pockets, which is not always practicable or convenient. Again, look at the two persons in the field,—the former appears like a Sportsman, and his errand cannot be mistaken; while the other looks sneaking, and as though other articles might be stowed away, in his capacious wallets, besides game. These hunting coats savour strongly of having had their origin with *Poachers.*

I will now suppose you are pressing your way to the fields, the first of which you enter; call in your dogs, and bring them to the "down charge," and then commence loading your gun. Previous to this, however, it will be well to discharge a cap on each tube, in order to clear them or the chambers from any dirt, or other substance which may have lodged there; this is all-sufficient, and prevents the necessity of discharging a load of powder, or as many call it, "squibbing off your gun." When you load, gripe the gun with your left hand about the topmost thimble, and hold the muzzle from you eight or ten inches, then with your right hand pour the powder first in the *off* barrel, after which the near one, and then take from your right pocket the wadding, which settle down on the powder firm, but not too hard. Your wadding should

be punched from bonnet-boards, and pierced with a small hole in each wad, in order to let all air pass through which may be confined between the wadding and powder. Your shot, also, take from the bag with the right hand, which may easily be done, by letting the charger hang downwards, observing the same plan of loading as with the powder. The main object of recommending one particular barrel to be charged *first*, is to habituate yourself to a regular system, which will prevent mistakes, and the *off*, or right barrel, is the one most usually fired, when only one is discharged. In no instance relax your hold of the gun with the left hand while loading, and by all means avoid *hugging* the gun as some do, while getting the shot from the bag;—one mistake may be fatal to yourself.

Beware of an error, too often followed by most beginners, and that is, of overcharging your gun; this is a mistake which many split on, and one-half of the wounding or missing the game altogether, may be justly attributed to it. If you have a gun of 11-16ths calibre, one drachm of powder, and one and a quarter ounces of shot is sufficient. I would advise you never to exceed this charge, but rather diminish the quantity; this will be found to be a fair proportion, as that quantity of powder will drive the whole or greater part of the shot to the object aimed at, with effect; whereas, if a greater charge of shot should be used, it is evident, that it will not only resist the action of the powder in proportion as the quantum of shot is increased, but also by greater friction along the barrels, in consequence of this accumulated weight, and the result will be, numbers will fall short of the object, and the gun, by reason of the crowded state of the shot, be necessarily leaded, besides the certainty of suffering from the reaction of the gun, and the bad result of making the shot scatter too much. Whatever quantity, however, you determine on, either in shot or powder, so regulate the respective charges of the flask and shot-bag, that no deviation may take place, but the same proportions always fired; a slight alteration in either of these, may materially interfere with your success.

If I had to make choice of a gun from the manner in which it planted the shot in a target, it would be that one which threw the shot not only regular but close; but no gun, if overloaded, will do this—hence the necessity of avoiding any cause which prevents this desirable end.

An ounce of No. 8 shot is said to contain 660 pellets, and my experience warrants me to aver, in most cases, that at a distance of thirty yards, as many pellets will be found in a target fired at with an ounce, as if by one and a half ounces of shot from the same gun and quantity of powder—consequently the folly of using more shot than a gun will drive home with certainty. Using light charges has also another great advantage, which is, not to affect the head in the manner which heavy charges do, if fired constantly on a warm day—therefore, my young friend, try a lesser quantity first, and if it does not prove satisfactory, increase your charge to or beyond my limits.

Another very important thing to the Sportsman, is the quality of the powder, and size of the shot,—of the former, there are but three kinds which may be said to have prevalence for sporting purposes in the United States. These are, Pigous' & Wilks, (London powder,) Dupont's Eagle powder, manufactured near Wilmington, in Delaware, and Rogers' Orange powder, made at Newburgh, New-York; the two former kinds I have always used, and for most purposes I would give preference to that made by Mr. Dupont; it is strong, clean, quick, and being much cheaper than the former, it certainly possesses great advantages. The manufacture of this powder certainly does great credit to the enterprising gentleman whose name it bears, as well as to the country; and it was not, until great perseverance on his part established it on so good a character, that we could depend with certainty on any powder manufactured in the United States. These facts should at once determine its use among Sportsmen, independent of encouraging an article of domestic manufacture. Another circumstance much in favour of the Eagle powder, is, the undeviating quality in the component parts; nor does it seem to be impaired by age, as one of the best canisters of this description I ever used, was one, which had been on ship-board, traversing the ocean many thousand miles, for a space of fifteen months. Pigous' & Wilks powder is the most celebrated in England, and is also very extensively used here. I have never tried the Orange powder, but have been told by the New-York Sportsmen, that it is of most excellent quality, and preferred by them to any sold in that market. I shall, however, speak more particularly on the merits of these different kinds of powder at some future day, as I shall test their qualities with much care.

A very common fault with many Sportsmen, is that of using shot too large. I have, generally, been very successful in my excursions, and always confined myself to No. 9, for woodcock and snipe, and No. 8, for partridges, (or quail)—this, I am aware, is two numbers smaller than many Sportsmen use, and one size smaller than the majority shoot, but, as my precepts are warranted by experience, I certainly recommend the learner to try those sizes.

I recollect the most pleasant day's shooting I ever had, (and withal successful,) was in consequence of having, in the early part of the day, lost my shot, the charger having been drawn while passing through a thicket, and I did not make the discovery until my bag was nearly empty. Game was in abundance, and my excursion was confined to a spot in the great valley in Chester county, Pa.; and I could not

replace my loss only by sending several miles to a store, and then my choice was limited to the sizes Nos. 4 and 11. I however chose the latter size, and purchased the whole stock, which was but little over three pounds. Thus scantily supplied in a region which abounded in game, I restricted my charges to rather less than one ounce, with a proportionate quantity of powder, and even thus reduced, I found that I not only killed my birds at as long distances, but with greater certainty than with No. 7—the size I had been using previously. This determined me in my future charges and size of the shot. I doubt, however, of my success, if the day had been very windy, as the shot was so exceedingly small, that the sudden blasts of wind which occur during that month, (December,) would entirely have diverted the shot from a right line: but not so with No. 8, as I have invariably used that size during the most windy weather, with effect. Success in killing the kind of game I am now speaking of, or indeed any kind of game whatever, is not attributable so much to the size, as the multiplicity of the shot thrown at it; the chances of killing multiply very fast after you pass No. 7 shot—for instance, an ounce of No. 7 contains but 289 pellets, while an ounce of No. 8 contains 660 pellets, by which it will appear that in augmenting the size only one number, your chances of striking the object aimed at are increased upwards of one hundred per cent.; or in other words, it will require two and an eighth ounces of No. 7 shot to give an equal number of chances with No. 8; by this, it must certainly appear that great advantages are on the side of finer shot than is ordinarily used. Again, an object twenty-five or thirty yards distant, will be struck sooner by fine than by coarse shot, although the latter may be driven with greater force; beyond this distance, however, coarse shot has the advantage. If, then, at the distance of thirty yards, small shot is driven with more velocity than coarser shot, and yet possess sufficient power to destroy the game shot at, my position is good, and fine shot in preference to coarse should be adopted. The argument which many use in favour of large shot, "that one frequently encounters larger game, such as Pheasants, &c." need be of no avail. The most effective and best shots I ever made were at Pheasants, with No. 8 shot; however, let the learner try the experiment, and if he does not find my advice correct, he can abandon it. I.

CHAMOIS HUNTERS.

The Tyrolese are perhaps the most persevering hunters in the world, and seem to despise all danger in their favourite pursuit. They are such admirable marksmen that their services as sharp-shooters, in the late war, were rewarded with the temporary liberty of hunting with impunity. The value of this liberty can only be estimated by those who know the passion of the Tyrolese for the chase, a passion more violent than that of the gamester. Neither threats nor punishment can deter them from the pursuit of it. Gain is not the object, as the Chamois, flesh and skin, does not sell for above ten or twelve florins; and yet a man who had been many times caught in the fact, declared, that if he knew the next tree would be his gallows, he would nevertheless hunt. M. de Saussure records an interesting anecdote of a Chamois hunter whom he knew; he was a tall, well-made man, and had just married a beautiful woman:—"My grandfather (said he) lost his life in the chase, and so did my father, and I am so well assured that one day or other I shall also lose mine, that this bag, which I always carry with me in the hunt, I call my winding-sheet, for I shall certainly never have any other; nevertheless, sir, if you were to offer me a fortune immediately, on condition that I must relinquish the chase, I would not accept it." De Saussure says, that he took several excursions among the Alps with this man; his strength and agility were astonishing, but his courage, or rather his temerity, still greater than either. About two years afterwards his foot slipped on the edge of a precipice, and he met the fate which he had so calmly contemplated.

[*Sportsman's Cyclopedia.*

BEAR HUNTING.

The Bridgeton (N. J.) Whig contains an account of a grand "*Bear Hunt,*" had in Cape May county on the 17th of April. Mr. Joshua Stiles discovered a Bear track leading from the bay to the sea side. He gave notice, and a company formed, and tracked Bruin into a swamp, where they found that he had breakfasted on a sheep. The next morning search was resumed, with one good dog. He immediately took the track, and dragged it through the swamp, and over the main road leading from Cape May Court House to Dennis Creek, and into a swamp to the northward of said road, where he started Bruin. The Bear not being in the swamp where the men expected to find him, they were, in consequence, thrown into confusion and disorder, running in all directions to keep in with the dog. A man who was carting cord wood, saw the Bear cross the road, and the dog behind, snapping him. The Bear, steering his course northwardly, ran out of hearing of the men, but the dog pursued him so closely, snapping

him, that finally he treed on a large oak, in the high woods north of Crooked Creek Swamp. Three of the company soon came within hearing of the dog, and made all possible speed to get in with him. On coming up they found the Bear sitting on a large limb of the tree, looking down at them, grinning and showing his long teeth, as though he bade them defiance. He did not appear to take any notice of the dog after the three men came up. Two of the men agreed to shoot him on the left side, with a view of reaching his heart. Each of them taking deliberate aim, they fired, and the third man, who had reserved his fire until the Bear had changed his position, fired also. The Bear let go his hold, and fell from the tree, a distance of about thirty feet. Notwithstanding the height from which he fell, he jumped up on his feet, and ran, with the dog fast to him, about a hundred yards. This was his final feat. There, after his noble breakfast of mutton, he fell, yielding to the more powerful influence of powder and ball. The remainder of the party kept coming in. A firing was kept up, so that all were soon there. Wagons were brought from different directions, and many persons round about, who heard the firing of the guns, assembled at the place. The body of Bruin was placed in one of the wagons, and the others followed in the rear. The company came into the neighbourhood of the Court House in military order, under the command of Captain Jonathan Hand. The Bear was taken to Mr. Nathaniel Holmes' barn, and dressed. He measured seven feet in length, and old men in the place, who had seen Bears, said this was the largest one they had ever seen.

COMPOSITION OF GUNPOWDER.

Dr. URE has analyzed various samples of Gunpowder, and the following are the results of his investigation:

Waltham Abbey—nitre, 74.5; charcoal, 14.4; sulphur, 10; water, 1.1.

Hall, Dartford—nitre, 76.2; charcoal, 14.; sulphur, 9.0; water, .5; loss, .3.

Pigou & Wilkes—nitre, 77.4; charcoal, 13.5; sulphur, 8.5; water, .6.

Curtis & Harvey—nitre, 76.7; charcoal, 12.5; sulphur, 9.; water, 1.1; loss, .7.

Battle Gunpowder—nitre, 77.; charcoal, 13.5; sulphur, .8.; water, .8; loss, 7.

"The process," observes Dr. Ure, "most commonly practised in the analysis of Gunpowder, seems to be tolerably exact. The nitre is first separated by hot distilled water, evaporated and weighed. A minute loss of salts may be counted on from its known volatility, with boiling water. I have evaporated always on a steam bath. It is probable that a small proportion of the lighter and looser constituents of Gunpowder, the carbon, flies off in the operation of corning and dusting. Hence analysis may show a small deficit of charcoal below the synthetic proportions originally mixed. The residuum of charcoal and sulphur left on the double filter paper, being well dried by the heat of ordinary steam, is estimated as usual by the difference of weights of the inner and outer papers. This residuum is cleared off into a platina capsule with a tooth brush, and digested in a dilute solution of potash at a boiling temperature. Three parts of potash are fully sufficient to dissolve out one of the sulphur. When the above solution is thrown on a filter, and washed first with a very dilute solution of potash boiling hot, then with boiling water, and afterwards dried, the carbon will remain; the weight of which deducted from that of the Powder, will show the amount of sulphur."

"If we acquire," says Dr. Ure, "how the maximum gaseous volume is to be produced from the chemical reaction of the elements of nitre on charcoal and sulphur, we shall find it to be by the generation of carbonic oxide and sulphureous acid, with the disengagement of nitrogen. This will lead us to the following proportions of these constituents:

1 prime equiv. of nitre			102	75.00 per cent.
1	do.	sulphur	16	11.77
3	do.	charcoal	18	13.23
			136	100.00

The (acid of the) nitre contains five primes of oxygen, of which three, combining with the three of charcoal, will furnish three of carbonic acid gas, while the remaining two will convert the one prime of sulphur into sulphureous acid gas. The single prime of nitrogen is, in this view, disengaged alone.

The gaseous volume, on this supposition, evolved from 136 grains of Gunpowder, equivalent in bulk to 75 grains of water, or three-tenths of a cubic inch, will be, at the atmospheric temperature as follows:

	Grains.	Cubic inches.
Carbonic oxide, -	42 - -	141.6
Sulphurous acid -	32 - -	47.2
Nitrogen - - -	14 - -	47.4

Being an expansion of one volume into 787.3. But as the temperature of the gases at the instant of their combustive formation must be incanescent, this volume may be safely estimated at three times the above amount, or considerably upwards of two thousand times the bulk of the explosive solid."—*Phil. Mag.*

RACCOON.

THE RACCOON.

PROCYON LOTOR.

[Plate VII. Vol. 2.]

Ursus Lotor; Lin. Erxl. Bodd.—*Vulpes Americana;* Charleton.—*Le Raton;* Buff. Hist. Nat. 8, pl. 43. —*Procyon Lotor;* Cuv. Reg. An. p. 143. Sabine app. p. 649.—*Coati Brasiliensium;* Klein.—*Mapach, etc.* Mexicanorum.—Menagerie of Living Animals, exhibited in Philadelphia, winter of 1831–2.

There are few parts of the American continent in which the Raccoon has not, at some period, been found native, from the borders of Nootka Sound, to the forests of Mexico, and still more southern regions. Yet the Count de Buffon asserts, that this animal was originally from South America, and is most numerous in hot climates, without giving any fact on which his opinion is founded, or supporting his declaration by the observations of other naturalists. Sonnini properly observes, that neither Frezier, Ulloa, nor Molina, who have given descriptions of the animals of Peru, Brazil, and Chili, make any mention of the Raccoon; and, in his own long and numerous journeys in Guiana, he never found one among the great number of quadrupeds which hold undisturbed possession of the vast forests, by which that interesting region is overshadowed.

But the most positive proofs of their existence, in the northern parts of this continent, are to be found in the journals of the most respectable observers. By Dampier, they were seen near the southern point of California, in the 22° of N. latitude; Bartram found them on the isle of St. Simon, near the coast of Georgia, in 30° of N. latitude; and the celebrated Capt. Cook saw them in considerable numbers at Nootka and Prince William's Sound. Most probably, had this enterprising voyager landed still farther north, he would have discovered the Raccoon there, as the natives of Prince William's Sound were, in a great degree, clothed with skins of this animal.

Were we to form an opinion of this animal's character solely from external appearances, the mingled expression of sagacity and innocence exhibited in his aspect, his personal neatness and gentle movements, might all incline us to believe that he possessed a guileless and placable disposition. But in this, as in most other cases where judgments are formed without sufficient examination, we should be in error, and find, that to the capricious mischievousness of the monkey, the Raccoon adds a blood-thirsty and vindictive spirit peculiarly his own. In the wild state, this sanguinary appetite frequently leads to his own destruction, which his nocturnal habits might otherwise avert; but as he slaughters the tenants of the poultry-yard with indiscriminate ferocity, the vengeance of the plundered farmer speedily retaliates on him the death so liberally dealt among the feathered victims. This destructive propensity of the Raccoon is more remarkable, when we observe that his teeth are not unsuited for eating fruits. When he destroys wild or domesticated birds, he puts to death a great number, without consuming any part of them, except the head, or the blood which is sucked from the neck.

Being peculiarly fond of sweet substances, the Raccoon is occasionally very destructive to plantations of sugar-cane,* and of Indian corn. While the ear of the Indian corn is still young, soft and tender, or "in the milk," it is very sweet, and is then eagerly sought by the Raccoons; troops of them frequently enter fields of maize, and in one night commit extensive depredations, both by the quantity of grain they consume, and from the number of stalks they break down by their weight.

The Raccoon is an excellent climber, and his strong sharp claws effectually secure him from being shaken off the branches of trees. In fact, so tenaciously does this animal hold to any surface upon which it can make an impression with its claws, that it requires a considerable exertion of a man's strength to drag him off; and as long as even a single foot remains attached, he continues to cling with great force. I have had frequent occasion to pull a Raccoon from the top of a board-fence, where there was no projection which he could seize by; yet, such was the power and obstinacy with which the points of his claws were stuck into the board, as repeatedly to oblige me to desist for fear of tearing his skin, or otherwise doing him injury by the violence necessary to detach his hold.

The conical form of the head, and the very pointed and flexible character of the muzzle or snout, are of great importance in aiding the Raccoon to examine every vacuity and crevice to which he gains access, nor does he neglect any opportunity of his natural advantages, but explores every nook and cranny, with the most persevering diligence and attention, greedily feeding on spiders, worms, or other insects which are discovered by the scrutiny. Where the opening is too small to give admittance to his nose, he employs his fore-paws, and shifts his position, or turns his paws sidewise, in order to facilitate their introduction and effect his purpose. This disposition to feed on the grubs or larvæ of insects must render this animal of considerable utility in forest lands, in consequence of

* Sir Hans Sloane; Natural History of Jamaica.

the great numbers of injurious and destructive insects he consumes. He is also said to catch frogs with considerable address, by slily creeping up, and then springing on them, so as to grasp them with both paws.

The circumstance which has procured for the Raccoon the specific name of "*Lotor*," or the *Washer*, is very remarkable and interesting: this is, the habit of plunging its food into water, as if for the purpose of soaking or cleansing it. To account for this disposition, some naturalists have supposed that the Raccoon is not as liberally supplied with salivary organs as other animals, and is therefore obliged to prepare its food by softening it in water. The Raccoon, however, does not invariably wait to subject his food to this preparation, but frequently devours it in the condition he receives it, although it may be nothing but dry bread, and clean water be within a few steps of where he stands.

Water seems to be essential to their comfort, if not of absolute necessity for the preparation of their food. I have had for some time, and at the moment of writing this have yet, a male and female Raccoon in the yard. Their greatest delight appears to be dabbling in water, of which a large tub is always kept nearly full for their use. They are frequently seen sitting on the edge of this tub, very busily engaged in playing with a piece of broken china, glass, or a small cake of ice. When they have any substance which sinks, they both paddle with their fore-feet with great eagerness, until it is caught, and then it is held by one, with both paws, and rubbed between them; or a struggle ensues for the possession of it, and when it is dropped the same sport is renewed. The coldest weather in winter does not in the least deter them from thus dabbling in the water for amusement; nor has this action much reference to their feeding, as it is performed at any time, even directly after feeding, till satiated. I have frequently broken the ice on the surface of their tub, late at night, in the very coldest winter weather, and they have both left their sleeping place with much alacrity, to stand paddling the fragments of ice about, with their fore-legs in the water nearly up to the breast. Indeed, these animals have never evinced the slightest dislike to cold, or suffered in any degree therefrom: they have in all weathers slept in a flour-barrel thrown on its side, with one end entirely open, and without any material of which to make a bed. They show no repugnance to being sprinkled or dashed with water, and voluntarily remain exposed to the rain or snow, which wets them thoroughly, notwithstanding their long hair, which being almost erect, is not well suited to turn the rain. These Raccoons are very fond of each other, and express the greatest delight on meeting after having been separated for a short time, by various movements, and by hugging and rolling one another about on the ground.

My Raccoons are, at the time of writing this, more than a year old, and have been in captivity for six or eight months. They are very frolicsome and amusing, and show no disposition to bite or injure any one, except when accidentally trodden on. They are equally free from any disposition to injure children, as has been observed of other individuals. We frequently turn them loose in the parlour, and they appear to be highly delighted, romping with each other and the children, without doing any injury even to the youngest. Their alleged disposition to hurt children especially, may probably be fairly explained by the fact above mentioned, that they always attempt to bite when suddenly hurt, and few children touch animals without pinching or hurting them. They exhibit this spirit of retaliation, not only to man, but when they accidentally hurt themselves against an inanimate body; I have many times been amused to observe the expression of spite with which one of them has sprung at and bit the leg of a chair or table, after knocking himself against it so as to hurt some part of his body.

These animals may be tamed while young, but as they grow to maturity, most generally become fierce and even dangerous. I have had one so tame as to follow a servant about through the house or streets, though entirely at liberty; this was quite young when obtained, and grew so fond of human society as to complain very loudly, by a sort of chirping or whining noise, when left alone. Nothing can possibly exceed the domesticated Raccoon in restless and mischievous curiosity, if suffered to go about the house. Every chink is ransacked, every article of furniture explored, and the neglect of servants to secure the closet-doors, is sure to be followed by extensive mischief, the evil being almost uniformly augmented by the alarm caused to the author of it, whose ill-directed efforts to escape from supposed peril, increase at the same time the noise and the destruction.

To complete the history of the Raccoon in a state of captivity, we shall insert here the greater part of a letter written by Mr. Blanquart de Salines to Count de Buffon, on the correctness of which full reliance may be placed.

"My Raccoon was always kept chained before he came into my possession, and in this captivity he seemed sufficiently gentle, though not caressing; all the inmates of the house paid him the same attention, but he received them differently; treatment he would submit to from one person, invariably offended him when offered by another. When his chain was occasionally broken, liberty rendered him insolent; he took possession of his apartment, suffering no one to approach him, and was, with difficulty, again con-

fined. During his stay with me, his confinement was frequently suspended; without losing sight of him, I allowed him to walk about with his chain on, and he expressed his gratitude by various movements. It was otherwise when he escaped by his own efforts: he would then ramble for three or four days together over the neighbouring roofs, and only descend at night into the yards, enter the hen-roosts and destroy the poultry, especially the Guinea-fowls, eating nothing but their heads. His chain did not render him less sanguinary, though it made him more circumspect; he then employed stratagem, allowing the poultry to familiarize themselves with him by partaking of his food, nor was it until he had induced them to feel in perfect security that he would seize a fowl and tear it to pieces: he also killed kittens in the same manner.

"If the Raccoon be not very grateful for favours received, he is singularly sensible of bad treatment; a servant one day struck him some blows with a stick, and often afterwards vainly endeavoured to conciliate him, by offering eggs and shrimps, of which the animal was very fond. At the approach of this servant he became enraged, and with sparkling eyes would spring towards him, making violent outcries; under such circumstances he would accept of nothing until his enemy had withdrawn. The voice of the Raccoon, when enraged, is very singular, sometimes resembling the whistling of a curlew, and at others the hoarse barking of an old dog. When struck by any one, or attacked by an animal stronger than himself, he offered no resistance; like the hedge-hog, he hid his head and paws, by rolling his body in form of a ball, and would have suffered death in that position. I have observed that he never left hay nor straw in his bed, preferring to sleep on the boards; when litter was given, he threw it away immediately. He did not seem very sensible to cold, and passed two out of three winters exposed to all the rigours of the season, and did well, notwithstanding he was frequently covered with snow. I do not think he was solicitous to receive warmth; during some frosts I gave him separately warm water, and water almost frozen, to soak his food in, and he always preferred the latter. He was at liberty to sleep in the stable, but often preferred passing the night in the open yard."

Captivity and domestication produce great changes in the habits of this animal, as he learns to spend nearly the whole of the daytime in active exercise, and sleeps during the greater part of the night. When inclined to sleep, the Raccoon forms itself into a sort of ball, by sitting on its hind legs, and doubling the head under the body, so as to apply the forehead to the ground; the tail is then brought forward so as to conceal the feet and face on one side, and the true figure of the animal is no longer discernible. In this position the Raccoon sleeps profoundly, and is not startled readily, nor by slight sounds.

The size of the Raccoon varies with the age and sex of the individual. A full grown male may be stated to have the body a foot, or a few inches more, in length; the highest part of the back is about a foot from the ground, while the highest part of the shoulder is ten inches. The head is about five, and the tail rather more than eight inches long. The female is larger than the male in every respect, at least such is the fact in relation to the Raccoons now in my possession, which, however, have not yet attained their full growth. They are of the same age, and the female is strongly distinguished from the male by the black markings on all parts of the body being more purely black, and the fur and hair longer, thicker, and more glossy than that of the male; these peculiarities, in addition to her greater size, uniformly lead strangers to suppose this individual to be the male, instead of the female. The pelage of the male is not only less purely black at the extremities of the hairs, but there is a much greater intermixture of fawn-coloured hair than in the female, giving more of a rusty appearance to the whole surface of his body. A young Raccoon of thirty days old, is about the size of a common cat of a year old, though the greater length of its legs, and the bushiness of its pelage, make it at first sight appear much larger.

The general colour of the body is a blackish-gray, which is paler on the under part of the body, and has, over considerable part of the neck, back and sides, some fawn or light rust-coloured hair intermixed. The general gray colour is owing to the manner in which the hairs are alternately ringed with black and dingy white. The tail is very thickly covered with hair, and is marked by five or six black rings around it, on a yellowish-white ground.

The head, which is about five inches long, is very triangular, and from its pointed snout reminds us of the aspect of the fox: the snout terminates in a smooth and shining black membrane, through which the nostrils open, having the slit to rise slightly at the sides. The nose is prolonged considerably beyond the upper jaw, and this, together with its great flexibility, gives the animal great advantages in exploring little crevices and crannies for insects, &c. The pupils of the eyes are round; the ears are oval, or rather elliptic, and of a yellowish-white colour on their extremities and anterior edges. The face is whitish in front, but there is a black patch surrounding the eye, that descends entirely to the lower jaw, over the posterior part of which it is diffused, and a black line running from the top of the head down the middle of the face, ending

below the eyes. The rest of the hair between the eyes, the ears, and eye-brows, is almost entirely white, and directed downwards. The hair on the muzzle is usually very short; on the feet also, and on one half of the legs; the short hair of the feet and legs is of a dirty whitish colour. The whiskers on the upper lip are long and strong.

All the feet have five toes each, terminated by strong curved and pointed claws; and each foot is furnished with five thick and very elastic tubercles beneath. The first toe or thumb of the fore-foot is the shortest of all; the little or external finger is next in length, and then the fore finger: the remaining two are equal. The first tubercle, which is a very strong one, is situated near the wrist; the second is at the base of the little finger; the third at the root of the inner finger or thumb; the fourth opposite the second digit, and the fifth opposite the two longest. The hind-feet are throughout similar, except that the first tubercle is farthest distant from the heel.

The Raccoon has a gland on each side of the anus, which secretes a strong scented fluid; but this does not impart an unpleasant smell to the animal. Its liver has five lobes, and is provided with a large gall-bladder; the bowels have no cœcum, and the stomach, which is situated entirely on the left side, is elongated and small, compared with the size of the animal.

The pelage of the Raccoon is subject to considerable variations of colour at different periods of life, and in different individuals. The rings on the tail, and the patches around the eyes are, however, uniform and constant. The tail of the Raccoon is not affected by the coldest weather; hence this quadruped is never known to gnaw his tail, as has been observed of animals closely allied to it in configuration and habits.

The fur of the Raccoon forms an article of considerable value in commerce, as it is largely employed in the fabrication of hats. Vast numbers of Raccoon skins are collected by the different fur companies; and we occasionally see in our furrier shops, skins which must have belonged to individuals of much larger size than those from which the measurements have been hitherto taken.

Raccoons are found throughout the whole of North America, and they still continue to be numerous in many of the well peopled parts of the United States. Occasionally their numbers are so much increased as to render them very troublesome to the farmers in the low and wooded parts of Maryland, bordering on the Chesapeake Bay. Their season of sexual intercourse begins in the first week of March; the female usually produces two or three cubs at a litter; her den is then made in some hollow tree, or very secure situation.—Godman.

THE HORSE.

[Continued from page 33.]

The East Indian Horse.

"We will now travel further eastward, and look at the breeds of Horses in the Indian possessions. First, we have the *Toorky*, originally from a Toorkoman and a Persian, beautiful in his form, graceful in his action, and docile in his temper. It is said that, when skilfully managed, the grandeur and stateliness of his carriage are equal to what the warmest imagination can conceive of the Horse: his spirit rising as his exertions are required, he exhibits to his beholders an appearance of fury in the performance of his task, yet preserving to his rider the utmost playfulness and gentleness.

Next comes the *Iranee*, well limbed, and his joints closely knit, and particularly powerful in the quarters, but with scarcely sufficient spirit, and his ears large and loose.

The patient and docile *Cozakee* is deep in the girth, powerful in the fore-arm, but with large head, and sadly cat-hammed; hardy, and calculated for long journeys and severe service.

The *Mojinniss* have spirit, beauty, speed, and perseverance.

The *Tazsee* is slight, hollow-backed, and, for that reason perhaps, although deficient in strength, and leaving as it were his hind-legs behind him, and likewise irritable in temper, yet sought after on account of the peculiar easiness of his pace.

A sale of Horses near the Company's stud, at Hissar, is thus described by an excellent judge. 'Not less than one thousand Horses were shown. They were all above fourteen hands and a half in height, high-crested, and showy-looking Horses. The great defect seemed a want of bone below the knee, which is indeed general to all the native Horses throughout India: and also so great a tendency to fulness in the hock, that, in England, it would be thought half of them had blood spavins.'

The Chinese Horse.

This breed is small, weak, ill-formed, without spirit, and altogether undeserving of notice.

The Persian Horse.

Returning westward we find the Persian next in estimation, and deservedly so, to the Arabian. The head is almost equally beautiful, the crupper superior; he is equal

in speed, but far inferior in endurance. The whole frame is more developed than in the Arabian, and is about fourteen to fourteen and a half hands high.

The Toorkoman Horse.

Turkistan is that part of South Tartary, north-east of the Caspian Sea, and has been celebrated from very early times, for producing a pure and valuable breed of Horses. They are called *Toorkomans*. They are said to be preferable even to the pure Persians, for service. They are large, standing from fifteen to sixteen hands high, swift, and inexhaustible under fatigue. Some of them have travelled nine hundred miles in eleven successive days. They, however, are somewhat too small in the barrel, too long in the legs,—occasionally ewe-necked, and always have a head out of proportion large: yet, such are the good qualities of the Horse, that one of the pure blood is worth two or three hundred pounds, even in that country.

The Tartar and Calmuck Horse.

The Horses of the other parts of Tartary, comprehending the immense plains of Central Asia, and a considerable part of European Russia, are little removed from a wild state: they are small and badly made; but capable of supporting the longest and most rapid journey, on the scantiest fare. The foals, from the earliest period, are exposed to the inclemency of the weather, have little to eat, and follow their dams in the longest excursions, and, therefore, soon acquire a very great power of sustaining fatigue. They must be hardy for another reason. The Tartars live much on the flesh of Horses, and, consequently, those animals that are unable to support the labour of their frequent rapid emigrations are soon destroyed, and only the more vigorous preserved.

The Horses, which range at large over the plains, are divided into herds, at the head of which are placed two stallions, who carefully prevent them from intermingling with each other, and it is rarely that a foal is lost. On the approach of a strange herd, the stallions drive their own into a close body, place themselves in front, and, if necessary, attack and drive off the others. As the stallion-foals grow up, they are driven away from the herd, and are seen straggling about at a distance, until they are strong enough to form herds of wild mares for themselves.

The Turkish Horse.

The Turkish Horses are descended principally from the Arab, crossed by the Persian and certain other bloods. The body, however, is even longer than the Arabian's, and the crupper more elevated. They have contributed materially to the improvement of the English breed. The Byerley and the Helmsley Turk are names familiar to every one conversant with Horses, and connected with the best blood.

The learned and benevolent Busbequius, who was ambassador at Constantinople in the seventeenth century, gives the following account of the Turkish Horses. Our grooms, and their masters too, may learn a lesson of wisdom and humanity from his words.

'There is no creature so gentle as a Turkish Horse, nor more respectful to his master, or the groom that dresses him. The reason is, because they treat their Horses with great lenity. I myself saw, when I was in Pontus, passing through a part of Bithinia called Axilos, towards Cappadocia, how indulgent the countrymen were to young colts, and how kindly they used them soon after they were foaled. They would stroke them, bring them into their houses, and almost to their tables, and use them even like children. They hung something like a jewel about their necks, and a garter, which was full of amulets against poison, which they are most afraid of. The grooms that dress them are as indulgent as their masters; they frequently sleek them down with their hands, and never use a cudgel to bang their sides, but in cases of necessity. This makes their Horses great lovers of mankind, and they are so far from kicking, wincing, or growing untractable by this gentle usage, that you will hardly find a masterless Horse amongst them.

'But, alas! our Christian grooms' horses go on at another rate. They never think them rightly curried till they thunder at them with their voices, and let their clubs or horse-whips, as it were, dwell on their sides. This makes some Horses even tremble when their keepers come into their stable; so that they hate and fear them too. But the Turks love to have their Horses so gentle, that at the word of command they may fall on their knees, and in this position receive their riders.

'They will take up a staff or club upon the road with their teeth, which their rider has let fall, and hold it up to him again; and when they are perfect in this lesson, then, for credit, they have rings of silver hung on their nostrils as a badge of honour and good discipline. I saw some Horses when their master was fallen from the saddle, stand stock still, without wagging a foot till he got up again. Another time I saw a groom standing at a distance in the midst of a whole ring of horses, and, at the word of command, they would either go round or stand still. Once I saw some Horses when their master was at dinner with me in an upper room, prick up their ears to hear his voice, and when they did so they neighed for joy.'

The German Horse.

The German Horses are generally large, heavy, and slow. The Hungarian may be an exception, being lighter, speedier, and giving greater proof of Eastern blood. Every part of the continent, however, has been diligently engaged in the improvement of its breed, and the German and Prussian Horses are now better proportioned, and have considerable endurance, but are still deficient in speed. The Prussian, German and the greater part of the French cavalry, are procured from Holstein. They are of a dark, glossy bay colour, with small heads, large nostrils, and full dark eyes, the fire and clearness of which seem to denote the inward spirit of the animal. They are beautiful, active, and strong.

The Swedish, Finland, and Norwegian Horse.

Of the *Swedish* Horses, Clarke, in his 'Scandinavia,' says, that they are small but beautiful, and remarkable for their speed and spirit. Those of Finland he describes as yet smaller, not more than twelve hands high, beautifully formed, and very fleet. The peasants take them from the forests when they are wanted for travellers. Although apparently wild, they are under perfect control, and they trot along with ease at the rate of twelve miles an hour.

The following story is told of one of the *Norwegian* Horses. His master had been dining at a neighbouring town, and when it was time to return, had exceeded so much, that he could not keep a firm seat in his saddle. The Horse regulated himself, as well as he could, according to the unsettled motion of his rider, but, happening to make a false step, the peasant was thrown, and hung with one foot entangled in the stirrup. The Horse immediately stopped, and twisting his body in various directions endeavoured to extricate his master, but in vain. The man was severely hurt, and almost helpless; but the shock had brought him to his senses. The Horse looked at him as he lay on the ground, and, stooping, laid hold of the brim of his hat, and raised his head a little; but the hat coming off, he fell again. The animal then laid hold of the collar of his coat, and raised him by it so far from the ground, that he was enabled to draw his foot out of the stirrup. After resting awhile he regained the saddle, and reached his home. Grateful to his preserver, the man did, what every good feeling bid him,—he cherished the animal until it died of old age.

Many a farmer owes a considerable debt of gratitude to his intelligent and faithful servant, who has taken care of him when he was unable to take care of himself, and, possibly, has preserved his life. Let him repay the debt by kinder usage.

The Iceland Horse.

There are numerous troops of Horses in this cold and inhospitable country, descended, according to Mr. Anderson, from the Norwegian Horse, but, according to Mr. Horrebow, being of Scottish origin. They are very small, strong, and swift. There are thousands of them in the mountains which never enter a stable, but instinct or habit has taught them to scrape away the snow, or break the ice, in search of their scanty food. A few are usually kept in the stable, but when the peasant wants more he catches as many as he needs, and shoes them himself, and that sometimes with a sheep's horn.

The Flemish and Dutch Horse.

The *Flemish* and *Dutch* Horses are large, and strongly and beautifully formed. We are indebted to them for some of the best blood of our draught Horses, and we still have frequent recourse to them for keeping up and improving the breed.

The French Horse.

France contains numerous breeds of Horses, and considerable attention has lately been paid to their improvement. The provinces of Auvergne and Poitou produce good ponies and galloways; but the best French Horses are bred in Limousin and Normandy. From the former district come excellent saddle-horses and hunters; and from the latter a stronger species, for the road, the cavalry, or the carriage. The Norman Horses are now much crossed by English hunters, and occasionally by the thorough-bred; and the English roadster and light draught Horse has not suffered by a mixture with the Norman.

The Spanish Horse.

Spain was early celebrated for her breed of Horses. The Andalusian charger and the Spanish jennet are familiar to all readers of romance. The subjugation of so great a portion of the peninsula to the Moorish sway, by introducing so much of the Barbary blood, mainly contributed to the undisputed excellence of the Spanish Horse. One breed, long in the limbs, and graceful in all its motions, was the favourite war-horse of the knight; while another race, carrying the esquire, although inferior in elegance, possessed far more strength and endurance. The Spanish Horse of the present day is not much unlike the Yorkshire half-breed; perhaps with flatter legs and better feet, but far inferior figure.

The Italian Horse.

The Italian Horses were once in high repute, particularly the Neapolitans; but like every thing else in those mismanaged countries, they have sadly degenerated. One circumstance has mainly contributed to this falling off in reputation and value, viz. that the breed has been kept up by occasional intermixture, not of Eastern but of European blood. A few of the Neapolitan Horses, from their superior size and stateliness, are well adapted for the carriage.

The American Horse.

In the extensive territory and varied climate of the United States, several breeds of Horses are found.

The *Canadian* is found principally in Canada, and the Northern States. He is supposed to be of French descent, and many of the celebrated American trotters are of this breed.

The *Conestoga* Horse is found in Pennsylvania and the middle States—long in the leg and light in the carcase—sometimes rising seventeen hands; used principally for the carriage, but when not too high, and with sufficient substance, useful for hunting and the saddle.

The *English* Horse, with a good deal of blood, prevails in Virginia and Kentucky; and is found, to a greater or less degree, in all the States. The Americans have, at different times, imported some of the best English blood. It has been most diligently and purely preserved in the Southern States. The celebrated Shark, the best horse of his day, and equalled by few at any time, was the sire of the best Virginian Horses; and Tally-ho, a son of Highflyer, peopled the Jerseys."

The Zebra

"Is, perhaps, the handsomest and most elegantly clothed of all quadrupeds. He has the shape and graces of the Horse, the swiftness of the stag, and a striped robe of black and white alternately disposed with so much regularity and symmetry, that it seems as if Nature had made use of the rule and compass to paint it. These alternate bands of black and white are so much the more singular, as they are straight, parallel, and very exactly divided, like a striped stuff; and as they, in other parts, extend themselves not only over the body, but over the head, the thighs, the legs, and even the ears and the tail; so that, at a distance, this animal appears as if he was surrounded with little fillets, which some person had disposed, in a regular manner, over every part of the body. In the females, these bands are alternately black and white; in the male, they are brown and yellow, but always of a lively and brilliant mixture, upon a short, fine, and thick hair; the lustre of which still more increases the beauty of the colours. The Zebra is, in general, less than the Horse, and larger than the Ass; and, although it has often been compared to those two animals, and called the *Wild Horse*, and the *Striped Ass*, it is a copy neither of the one nor the other, and might rather be called their model, if all was not equally original in nature, and if every species had not an equal right to creation.

The Zebra is not the animal the ancients have indicated under the name *Onagra*. There exists in the Levant, the eastern parts of Asia, and in the northern parts of Africa, a beautiful race of asses, which, like the finest horses, are natives of Arabia. This race differs from the common, by the size of the body, the slenderness of the legs, and the lustre of the hair; they are of a uniform, but commonly of a fine mouse colour, with a black cross upon the back and the shoulders; and sometimes they are of a bright gray colour, with a flaxen cross. The Zebra is also of a different climate from the Onagra, and is only to be met with in the most eastern and the most southern parts of Africa, from Ethiopia to the Cape of Good Hope, and thence to Congo: it exists neither in Europe, Asia, nor America, nor even in all the northern parts of Africa: those which some travellers tell us they have seen at the Brazils, have been transported thither from Africa; those which others are recounted to have seen in Persia and in Turkey, have been brought from Ethiopia; and, in short, those that we have seen in Europe are almost all from the Cape of Good Hope. This point of Africa is their true climate, their native country, and where the Dutch have employed all their care to subject them and to render them tame without having been hitherto able to succeed.

The Zebra is chiefly found in the southern parts of Africa; often seen near the Cape of Good Hope, and a penalty of fifty rix-dollars is inflicted on any person who shoots one of them. Such of them as are caught alive are presented to the governor. Several have been brought to America, but they have all displayed great wildness and even ferocity.

The Zebra of the Plains.

The Zebra which we have just described is confined to the mountains; the subject of the present article inhabits the flat parts near the Cape. Till very recently, the difference between them was not accurately understood. 'The ground colour of its whole body, (says Mr. Bennett) is white, interrupted by a regular series of broad black

stripes extending from the back across the sides, with narrower and fainter ones intervening between each. Over the haunches and shoulders these stripes form a kind of bifurcation, between the divisions of which there are a few transverse lines of the same colour; but these suddenly and abruptly cease, and are not continued on the legs, which are perfectly white. Along the back there is a narrow longitudinal line, bordered on each side with white. The mane is throughout broadly and deeply tipped with black, and is marked by a continuation of the transverse bands of the neck. The lines of the face are narrow and beautifully regular; from the centre of the forehead they radiate downwards over the eyes; along the front of the muzzle they are longitudinal, the outer ones having a curve outwards; and on the sides they form broader transverse bands. From the confluence of these bands on the extremity of the muzzle, the nose, and the lower lip, those parts become of a nearly uniform blackish brown. The tail is white; there is no longitudinal ventral line: and a large black patch occupies the posterior part of the ear, near the tip. The hoofs are moderately large, deep in front, shallow behind, and much expanded at their margin.'

The Ass.

If we consider this animal with some degree of attention, he appears only to be a Horse degenerated. The perfect similitude in the conformation of the internal parts, and the great resemblance of the body, legs, feet, and the entire skeleton, is a sufficient foundation for this opinion; we may also attribute the slight differences which are found between these two animals, to the influence of the climate, food, and the fortuitous succession of many generations of small wild Horses, half degenerated, which, by little and little, have still continued degenerating, and have at last produced a new and fixed species; or rather a succession of individuals alike, all vitiated in the same manner, sufficiently differing from a Horse to be looked upon as another species. What appears to favour this notion is, that as Horses vary much more than Asses in the colour of their skin, they are consequently more anciently domestic, since all domestic animals vary much more in their colour than wild ones of the same species; that the greater number of wild Horses of which travellers speak, are small in their size, and have, like Asses, the coat gray, and the tail naked and frizzled at the end; and, that there are wild Horses, and even domestic ones, which have a black stripe on the back, and other marks, which nearly resemble both wild and domestic Asses.

Again, if we consider the difference of the temperament, disposition, and manners; in a word, the organism of these two animals, and above all, the impossibility of mixing the breed to make one common species, or even an intermediate species which may be renewed; it appears a better founded opinion, that these animals are of a species equally ancient, and originally as essentially different as they are at present; as the Ass differs materially from the Horse, in the smallness of the size, largeness of the head, length of the ears, hardness of the skin, nakedness of the tail, the form of the rump, and also in the voice, the appetite, manner of drinking, &c. Do the Horse and the Ass, then, come originally from the same stock? are they of the same family or not? and have they not always been different animals?

Although we cannot demonstrate that the production of a species, by degeneration, is a thing impossible in nature, yet the number of probabilities to the contrary is so great, that even philosophically, we can no longer doubt of it; for if some species have been produced by the degeneration of others, if the species of the Ass comes from the species of the Horse, this can only have happened successively, and by degrees there would have been, between the Horse and the Ass, a great number of intermediate animals, the first of which would have differed but slightly in its nature from the Horse, and the latter would have approached by degrees to that of the Ass; and why do we not see the representatives, the descendants of these intermediate species? why do only the two extremes remain?

The Ass is then an Ass, and not a Horse degenerated; the Ass has a naked tail; he is neither a stranger, an intruder, nor a bastard; he has, like all other animals, his family, his species, and his rank; his blood is pure; and although his nobility is less illustrious, yet it is equally good, equally ancient with that of the Horse. Why, then, have we so much contempt for this animal; so good, so patient, so steady, so useful? do men carry their contempt even to animals, those which serve them so well, and at so small an expense? We bestow education on the Horse, take care of him, instruct him, and exercise him, whilst the Ass is abandoned to the care of the lowest servant, or the tricks of children; so that, instead of improving, he must lose by his education; and if there were not a fund of good qualities, he would certainly lose them by the manner in which he is treated. He is the May-game of the rustics, who beat him with staffs, overload him, and make him work beyond his strength. We do not consider, that the Ass would be in himself, and with respect to us, the most beautiful, the best formed, and most distinguished of animals, if there were no Horse in the world; he is the second, instead of being the first; and it is from that only, that he appears to be of no value: the compari-

son degrades him; we look at him, and give our opinions, not from himself, but comparatively with the Horse; we forget that he is an Ass, that he has all the good qualities of his nature, all the gifts attached to his species; and at the same time, we only think of the figure and qualities of the Horse which are wanting in him, and which he ought not to have.

There are among Asses different races, as among Horses; but they are much less known, because they have not been taken the same care of, or followed with the same attention; but we cannot doubt that they came all originally from warm climates. Aristotle assures us, that there were none in his time in Scythia, nor in the other neighbouring countries of Scythia, nor even in Gaul, which, he says, is a cold climate; and he adds, that a cold climate either prevents them from procreating their species, or causes them to degenerate; and that this last circumstance is the reason that they are small and weak in Illyria, Thrace, and Epirus. They appear to have come originally from Arabia, and to have passed from Arabia into Egypt, from Egypt into Greece, from Greece into Italy, from Italy into France, and afterwards into Germany, England, and lastly into Sweden, &c. for they are in fact, weak and small in proportion to the coldness of the climate. They are said to have been introduced into England subsequently to the reign of Elizabeth. Of all the various breeds of Asses, the Spanish breed is by far the finest. They are often found of the height of fifteen hands, and the value of a hundred guineas.

The Latins, after the Greeks, have called the Wild Ass, Angra; which animal must not be confounded, as some naturalists and many travellers have done, with the Zebra, because the Zebra is of a different species from the Ass. The Angra, or Wild Ass, is not striped like the Zebra, and is not near so elegant in figure. Wild Asses are found in some of the islands of the Archipelago, and particularly in that of Cerigo; there are also many in the deserts of Libya and Numidia; they are gray, and run so fast that the Horses of Barbary only can beat them in hunting. When they see a man, they give a loud cry, turn themselves about, and stop, and do not attempt to fly till they find he comes near them; they are taken in snares made with ropes, and go in troops both to pasturage and to drink; their flesh is also eaten. There were also, in the time of Marmol, Wild Asses in the island of Sardinia, but less than those of Africa, and Pietro della Valle says, he has seen a Wild Ass at Bassora, whose figure differed in no respect from a domestic one; he was only of a lighter colour, and had, from the head to the tail, a stripe of white; he was also much livelier and lighter in hunting, than Asses usually are.

Neither Asses nor Horses were originally found in America, though the climate, and especially of that part called North America, is as good for them as any other: those which the Spaniards have transported from Europe, and which they have left in the West Indies and on the continent, have greatly multiplied; and in some parts Wild Asses are found in troops, and are taken in snares like wild Horses. The Wild Asses of America will not suffer a Horse to live among them. Wo to the Horse that chances to stray into the pasture where they are feeding in bands. They fall upon him, and bite and kick him till he ceases to exist.

As Wild Asses are unknown in these climates, we cannot in reality say whether the flesh is good to eat; but it is certain that the flesh of the domestic Ass is extremely bad, and harder than that of the Horse. The milk of the Ass, on the contrary, is an approved and specific remedy for certain complaints, and its use was known from the Greeks to us: that it may be good in its kind, we should choose a young healthy she Ass, full of flesh, which has lately foaled, and which has not since been with the male: care must be taken to feed her well with hay, wheat, and grass, with particular care not to let the milk cool, and not even to expose it to the air, which will spoil it in a little time.

The Ass is, perhaps with respect to himself, the animal which can carry the greatest weight; and as it costs but little to feed him, and he scarcely requires any care; he is of great use in the country, at the mill, &c.; he also serves to ride on, as all his paces are gentle, and he stumbles less than the Horse: he is frequently put to the plough in countries where the earth is light, and his dung is an excellent manure to enrich hard moist lands.

The Ass, like some other animals, and some birds, possesses in great perfection the power of finding his way home, when lost at a great distance. An instance of this is recorded by Kirby and Spence, in their excellent Introduction to Entomology. In March, 1816, an Ass, the property of Captain Dundas, R. N. then at Malta, was shipped on board the Ister frigate, Captain Forrest, bound from Gibraltar for that island. The vessel having struck on some sands off the Point de Gat, at some distance from the shore, the Ass was thrown overboard to give it a chance of swimming to land,—a poor one, for the sea was running so high, that a boat which left the ship was lost. A few days afterwards, however, when the gates of Gibraltar were opened in the morning, the Ass presented himself for admittance, and proceeded to the stable of Mr. Weeks, a merchant, which he had formerly occupied, to the no small surprise of [this gentleman, who imagined that, from some accident, the animal had never been shipped on board the Ister. On the return of this vessel

to repair, the mystery was explained, and it turned out, that Valiante, (as the Ass was called,) had not only swam safely to shore, but without guide, compass, or travelling map, had found his way from Point de Gat to Gibraltar,—a distance of more than two hundred miles, through a mountainous and intricate country, intersected by streams, which he had never traversed before, and in so short a period, that he could not have made one false turn. His not having been stopped on the road was attributed to the circumstance of his having formerly been used to whip criminals upon, which was indicated to the peasants, who have a superstitious horror of such Asses, by the holes in his ears, to which the persons flogged were tied.

The Mule

Is an intermediate creature, springing from the union of the male Ass with the Mare, or of the Horse with the female Ass, (the former being the best;) and it accordingly inherits the small legs and handsome shape of the Horse, and the long ears, and cross on the back, which characterize its more humble parent. In obstinacy it surpasses the latter; but it is valuable for its sureness of foot, which enables it to pass with safety along the most tremendous precipices, if left to the guidance of its own instinct. The Mule is fond of handsome trappings, and is longer lived than either the Horse or the Ass. Nature denies it the power of continuing its race. In one or two instances, however, an exception has occurred to this rule.

[*To be continued.*]

INCUBATION.

A HEN has scarcely sat on the egg twelve hours, when some lineaments of the head and body of the chicken appear. The heart may be seen to beat at the end of the second day; it has at that time somewhat of the form of a horse-shoe, but no blood yet appears. At the end of two days the vesicles of blood are to be distinguished, the pulsation of which is very visible: one of them is the left ventricle, and the other the root of the great artery. At the end of the fiftieth hour, one auricle of the heart appears, and resembles a noose folded down upon itself. The beating of the heart is first observed in the auricle and afterwards in the ventricle. At the end of seventy hours the wings are distinguishable; and on the head two bubbles are seen for the brain; one for the bill; and two others, for the fore and hind part of the head. Towards the end of the fourth day, the two auricles, already visible, draw nearer to the heart than they did before. The liver appears towards the fifth day. At the expiration of one hundred and thirty-four hours, the first voluntary motion is observed; in seven hours more, the lungs and stomach become visible; and four hours after this, the intestines, the loins, and the upper jaw. At the hundred and forty-fourth hour, two ventricles are discerned, and two drops of blood, instead of the single one which was seen before. The seventh day, the brain begins to have some consistence. At the hundred and ninetieth hour of incubation, the bill opens, and the flesh appears in the breast; in four hours more, the breast bone is seen; and in six after this, the ribs appear, forming from the back; and the bill is plainly seen, as well as the gall-bladder. The bill becomes green at the end of two hundred and thirty-six hours, and if the chicken is taken out of its coverings, it evidently moves itself. The feathers begin to shoot out towards the two hundred and fortieth hour, and the skull becomes gristly. At the two hundred and sixty-fourth, the eyes appear. At the two hundred and eighty-eighth, the ribs are perfect. At the three hundred and thirty-first, the spleen draws near the stomach, and the lungs to the chest. At the end of three hundred and fifty-five hours, the bill frequently opens and shuts; and at the end of the eighteenth day, the first cry of the chicken is heard. It afterwards gets more strength and grows constantly, till at length it is enabled to set itself free from its confinement.

In the total of this process must be remarked, that every part appears at the appropriate time; if, for example, the liver is formed on the fifth day, it is founded on the preceding situation of the chicken, and on the changes which are to follow. No part of the body could possibly appear, either sooner or later, without the whole embryo suffering; and each of the limbs becomes visible at the proper moment. This ordination, so invariable in its effects, is manifestly the work of a supreme Being, whose creative powers must be still more sensibly acknowledged, when the manner in which the chicken is formed out of the parts which compose the egg is also considered; how astonishing it is that in this there should exist the principles of life: that all the parts of an animal's body should therein be concealed, and require nothing but heat to unfold and quicken them—that the formation of the bird should be so regular—that exactly at the same instant the same changes will take place in a great number of eggs—that the chicken, when hatched, is heavier than the egg was before. But even these are not all the wonders in the production of the bird from the egg, (and this instance will serve to illustrate the whole feathered race,) there are others, which,

from our limited faculties, are altogether hidden from our research.

Hatching chickens by artificial heat, is a process that has been long known in Egypt: (it was successfully tried by Mr. Potter, in the isle of Ely, both with hens and pheasants' eggs,) but this is only now practised by the inhabitants of a single village called Berne, and by those who live in its immediate vicinity. About the beginning of autumn, these persons spread themselves all over the country, and each of them are ready to undertake the management of an oven. These ovens are of different sizes, capable of containing from forty to eighty thousand eggs; and the number of ovens in different parts, was about three hundred and eighty. These were annually kept working for about six months; and as each brood takes up twenty-one days in hatching, it is easy in every one of them to produce eight different broods of chickens in the year.

The ovens are of the most simple construction, consisting of only a low arched apartment of clay. Two rows of shelves are formed, and the eggs are placed so as not to touch each other. They are slightly moved five or six times in every twenty-four hours. All possible care is to be taken to diffuse the heat equally throughout; and there is but one small aperture large enough to admit a man stooping. During the first eight days, the heat is rendered great, in the last eight it is gradually diminished, till at length, when the young brood is ready to come forth, it is reduced almost to the state of the natural atmosphere. At the end of the first eight days, it is known which of the eggs will not be productive.

Every person who undertakes the care of an oven is under the obligation of delivering to his employer only two-thirds of as many chickens as there have been eggs given to him, and he is a gainer by this bargain, as it always happens (except from some unexpected accident) that more than two-thirds of the eggs produce birds. In order to make a calculation of the number of chickens thus hatched yearly in Egypt, it has been supposed that, upon an average of only two-thirds of the eggs being productive, and that each brood consists of at least thirty thousand chickens, the ovens, by this estimate, give life, annually, to about 92,600,000 of these animals.

M. de Reaumur introduced this advantageous mode of hatching eggs into France, and by a number of ingenious experiments, reduced the art to certain principles. He found that the degree of heat necessary for the production of all kinds of domestic fowls was the same, the only difference consisting in the time during which it ought to be communicated to the eggs; it will bring the canary-bird to perfection in eleven or twelve days, while the turkey poult requires from twenty-four to twenty-eight. M. de Reaumur found that stoves heated by means of pipes from a baker's oven, or the furnace of glass-houses, succeeded better than those made hot by layers of dung, the mode preferred in Egypt. These should have their heat kept as nearly equal as possible, and the eggs should be frequently removed from the sides into the middle, in order that each may receive an equal portion of heat. After the eggs were hatched, he had the offspring put into a kind of low boxes without bottoms, and lined with fur, the warmth of which supplied that of the hen, and in which the chickens could at any time take shelter. Till the chickens acquired some strength, these boxes were kept in a warm room; with safety they then could be exposed to the open air in a court-yard. The young seldom take any food the whole day after being hatched; then a few crumbs of bread are given for a day or two, after which time they begin to pick up insects and grain for themselves. That the trouble of attending them might be saved, M. de Reaumur taught capons to watch them in the same manner as hens, of which three or four were sufficient to take care of two hundred chickens.

RAPID PROPAGATION OF DOMESTIC QUADRUPEDS.

Next to the direct agency of man, his indirect influence in multiplying the numbers of large herbivorous quadrupeds of domesticated races, may be regarded as one of the most obvious causes of the extermination of species. On this, and on several other grounds, the introduction of the horse, ox, and other mammalia, into America, and their rapid propagation over the continent within the last three centuries, is a fact of great importance in natural history. The extraordinary herds of wild cattle and horses which overrun the plains of South America, sprung from a very few pairs first carried over by the Spaniards; and they prove that the wide geographical range of large species in great continents, does not necessarily imply that they have existed there from remote periods. Humboldt observes, in his Travels, on the authority of Azzara, that it is believed there exist, in the Pampas of Buenos Ayres, twelve million cows and three million horses, without comprising in this enumeration, the cattle that have no acknowledged proprietor. In the Llanos of Caraccas, the rich hateros, or proprietors of pastoral farms, are entirely ignorant of the number of cattle they possess. The young are branded with a mark peculiar to each herd, and some of the most wealthy owners mark as many as fourteen thousand a year.

In the northern plains, from the Orinoco to the lake of Maracaybo, M. Depons reckoned that one million two hundred thousand oxen, one hundred and eighty thousand horses, and ninety thousand mules, wandered at large. In some parts of the valley of the Mississippi, especially in the country of the Osage Indians, wild horses are immensely numerous.

The establishment of black cattle in America dates from Columbus' second voyage to St. Domingo. They there multiplied rapidly; and that island presently became a kind of nursery from which these animals were successively transported to various parts of the continental coast, and from thence into the interior. Notwithstanding these numerous exportations, in twenty-seven years after the discovery of the islands, herds of four thousand head, as we learn from Oviedo, were not uncommon, and there were even some that amounted to eight thousand. In 1587, the number of hides exported from St. Domingo alone, according to Acosta's report, was thirty-five thousand four hundred and forty-four; and in the same year there were exported sixty-four thousand three hundred and fifty from the ports of New Spain. This was in the sixty-fifth year after the taking of Mexico, previous to which event the Spaniards, who came into that country, had not been able to engage in any thing else than war.

All our readers are aware, that these animals are now established throughout the American continent, from Canada to Paraguay.

The ass has thriven very generally in the New World; and we learn from Ulloa, that in Quito they ran wild, and multiplied in amazing numbers, so as to become a nuisance. They grazed together in herds, and, when attacked, defended themselves with their mouths. If a horse happened to stray into the places where they fed, they all fell upon him, and did not cease biting and kicking till they left him dead.

The first hogs were carried to America by Columbus, and established in the island of St. Domingo the year following its discovery in November, 1493. In succeeding years they were introduced into other places where the Spaniards settled; and, in the space of half a century, they were found established in the New World, from the latitude of 25° north, to the 40th degree of south latitude. Sheep, also, and goats have multiplied enormously in the New World, as have also the cat and the rat, which last has been imported unintentionally in ships. The dogs introduced by man, which have at different periods become wild in America, hunted in packs like the wolf and the jackal, destroying not only hogs, but the calves and foals of the wild cattle and horses.

Ulloa in his voyage, and Buffon on the authority of old writers, relate a fact which illustrates very clearly the principle of the check which the increase of one animal necessarily offers to that of another. The Spaniards had introduced goats into the island of Juan Fernandez, where they became so prolific as to furnish the pirates who infested those seas with provisions. In order to cut off this resource from the buccaneers, a number of dogs were turned loose into the island; and so numerous did they become in their turn, that they destroyed the goats in every accessible part, after which the number of the wild dogs again decreased.

As an example of the rapidity with which a large tract may become peopled by the offspring of a single pair of quadrupeds, we may mention that in the year 1773 thirteen rein-deer were exported from Norway, only three of which reached Iceland. These were turned loose into the mountains of Guldbringè Syssel, where they multiplied so greatly, in the course of forty years, that it was not uncommon to meet with herds consisting of from forty to one hundred in various districts.

In Lapland, observes a modern writer, the rein-deer is a loser by his connexion with man, but Iceland will be this creature's paradise. There is, in the interior, a tract which Sir G. Mackenzie computes at not less than forty thousand square miles, without a single human habitation, and almost entirely unknown to the natives themselves. There are no wolves; the Icelander will keep out the bears; and the rein-deer, being almost unmolested by man, will have no enemy whatever, unless it has brought with it its own tormenting gad-fly.

Besides the quadrupeds before enumerated by us, our domestic fowls have also succeeded in the West Indies and America, where they have the common fowl, the goose, the duck, the peacock, the pigeon, and the guinea-fowl. As these were often taken suddenly from the temperate to very hot regions, they were not reared at first without much difficulty: but after a few generations they became familiarized to the climate, which, in many cases, approached much nearer than that of Europe to the temperature of their original native countries.

The fact of so many millions of wild and tame individuals of our domestic species, almost all of them the largest quadrupeds and birds, having been propagated throughout the new continent within the short period that has elapsed since the discovery of America, while no appreciable improvement can have been made in the productive powers of that vast continent, affords abundant evidence of the extraordinary changes which accompany the diffusion and progressive advancement of the human race over the globe. That it should have remained for us to witness such mighty revolutions is a proof, even if there was no other evidence,

From Nature & on Stone by M.F. Brown

MARYLAND YELLOW-THROAT.

AMERICAN REDSTART.

that the entrance of man into the planet is, comparatively speaking, of extremely modern date, and that the effects of his agency are only beginning to be felt.

A modern writer has estimated, that there are in America upwards of four millions square miles of useful soil, each capable of supporting two hundred persons; and nearly six million, each mile capable of supporting four hundred and ninety persons. If this conjecture be true, it will follow, as that author observes, that if the natural resources of America were fully developed, it would afford sustenance to five times as great a number of inhabitants as the entire mass of human beings existing at present upon the globe. The new continent, he thinks, though less than half the size of the old, contains an equal quantity of useful soil, and much more than an equal amount of productive power. Be this as it may, we may safely conclude that the amount of human population now existing, constitutes but a small proportion of that which the globe is capable of supporting, or which it is destined to sustain at no distant period, by the rapid progress of society, especially in America, Australia, and certain parts of the old continent.

[*Lyell's Geology.*

MARYLAND YELLOW-THROAT.

SYLVIA MARILANDICA.

[Plate VIII. Vol. 2. Size of life.]

Turdus Trichas, Linn. *Syst.* i. 293.—Edw. 237.—*Yellow-breasted Warbler*, *Arct. Zool.* ii. No. 283. *Id.* 284.—*Le Figuier aux joues noires*, Buff. v. 292.—*La Fauvette a poitrine jaune de la Louisiane*, Buff. v. 162. *Pl. Enl.* 709, *fig.* 2.—Lath. *Syn.* iv.—J. Doughty's Collection.

This is one of the humble inhabitants of briars, brambles, alder bushes, and such shrubbery as grow most luxuriantly in low watery situations, and might with propriety be denominated *Humility*, its business or ambition seldom leading it higher than the tops of the underwood. Insects and their larvæ are its usual food. It dives into the deepest of the thicket, rambles among the roots, searches round the stems, examines both sides of the leaf, raising itself on its legs so as to peep into every crevice; amusing itself at times with a very simple, and not disagreeable, song or twitter, *whitititee, whititititee, whititititee;* pausing for half a minute or so, and then repeating its notes as before. It inhabits the whole United States from Maine to Florida, and also Louisiana; and is particularly numerous in the low swampy thickets of Maryland, Pennsylvania, and New-Jersey. It is by no means shy; but seems deliberate and unsuspicious, as if the places it frequented, or its own diminutiveness, were its sufficient security. It often visits the fields of growing rye, wheat, barley, &c. and no doubt performs the part of a friend to the farmer, in ridding the stalks of vermin, that might otherwise lay waste his fields. It seldom approaches the farm-house or city; but lives in obscurity and peace amidst his favourite thickets. It arrives in Pennsylvania about the middle or last week of April, and begins to build its nest about the middle of May: this is fixed on the ground, among the dried leaves, in the very depth of a thicket of briars, sometimes arched over, and a small hole left for entrance; the materials are dry leaves and fine grass, lined with coarse hair; the eggs are five, white, or semi-transparent, marked with specks of reddish-brown. The young leave the nest about the twenty-second of June, and a second brood is often raised in the same season. Early in September they leave us, returning to the south.

This pretty little species is four inches and three-quarters long, and six inches and a quarter in extent; back, wings, and tail, green-olive, which also covers the upper part of the neck, but approaches to cinereous on the crown; the eyes are inserted in a band of black, which passes from the front, on both sides, reaching half way down the neck; this is bounded above by another band of white deepening into light blue; throat, breast, and vent brilliant yellow; belly, a fainter tinge of the same colour; inside coverts of the wings also yellow; tips and inner vanes of the wings, dusky brown; tail cuneiform, dusky, edged with olive-green: bill black, straight, slender, of the true Motacilla form; though the bird itself was considered as a species of Thrush by Linnæus, but very properly removed to the genus Motacilla by Gmelin; legs flesh-coloured; iris of the eye dark hazel. The female wants the black band through the eye, has the bill brown, and the throat of a much paler yellow. This last, I have good reason to suspect, has been described by Europeans as a separate species; and that from Louisiana, referred to in the synonymes, appears evidently the same as the former, the chief difference, according to Buffon, being in its wedged tail, which is likewise the true form of our own species; so that this error corrected will abridge the European nomenclature of two species.

The chief difference between the male and female, in the markings of their plumage, is, that the female is destitute of the black bar through the eyes, and the bordering one of pale bluish-white.—Wilson.

AMERICAN REDSTART.

MUSCICAPA RUTICILLA.

[Plate VIII. Vol. 2. Size of life.]

Muscicapa Ruticilla, Linn. *Syst.* i. 236, 10.—Gmel. *Syst.* i. 935.—*Motacilla flavicauda*, Gmel. *Syst.* i. 997. *(female.)*—*Le Gobemouche d'Amerique*, Briss. *Orn.* ii. 383, 14. *Pl. Enl.* 566, *fig.* 1, 2.—*Small American Redstart*, Edw. 80, *Id.* 257. *(female.)*—*Yellow-tailed Warbler, Arct. Zool.* ii. *No.* 301. *Id.* ii. *No.* 282.—Latham *Syn.* iv. 427, 18.—*Arct. Zool.* ii. *No.* 301.—J. Doughty's Collection.

Though this bird has been classed by several of our most respectable ornithologists, among the Warblers, yet in no species are the characteristics of the genus *Muscicapa* more decisively marked; and in fact it is one of the most expert Flycatchers of its tribe. It is almost perpetually in motion; and will pursue a retreating party of flies from the tops of the tallest trees, in an almost perpendicular but zig-zag direction, to the ground, while the clicking of its bill is distinctly heard, and I doubt not but it often secures ten or twelve of these in a descent of three or four seconds. It then alights on an adjoining branch, traverses it lengthwise for a few moments, flirting its expanded tail from side to side, and suddenly shoots off, in a direction quite unexpected, after fresh game, which it can discover at a great distance. Its notes, or twitter, though animated and sprightly, are not deserving the name of song; sometimes they are *weese, weese, weese*, repeated every quarter of a minute, as it skips among the branches; at other times this twitter varies to several other chants, which I can instantly distinguish in the woods, but cannot find words to imitate. The interior of the forest, the borders of swamps and meadows, deep glens covered with wood, and wherever flying insects abound, there this little bird is sure to be seen. It makes its appearance in Pennsylvania, from the south, late in April, and leaves us again about the beginning of September. It is very generally found over the whole United States; and has been taken at sea, in the fall, on its way to St. Domingo and other of the West India islands, where it winters, along with many more of our summer visitants. It is also found in Jamaica, where it remains all winter.

The name Redstart, evidently derived from the German *Rothsterts*, (red tail,) has been given this bird from its supposed resemblance to the Redstart of Europe, (*Motacilla phoenicurus;*) but besides being decisively of a different genus, it is very different both in size and in the tints and disposition of the colours of its plumage. Buffon goes even so far as to question whether the differences between the two be more than what might be naturally expected from change of climate. This eternal reference of every animal of the New World to that of the old, if adopted to the extent of this writer, with all the transmutations it is supposed to have produced, would leave us in doubt whether even the *Ka-te-dids* of America, (a species of Gryllus, well known for its lively chatter during the evenings and nights of September and October,) were not originally Nightingales of the old world, degenerated by the inferiority of the food and climate of this upstart continent. We have in America many different species of birds that approach so near in resemblance to one another, as not to be distinguished but by the eye of a naturalist, and on a close comparison; these live in the same climate, feed on the same food, and are, I doubt not, the same now as they were five thousand years ago; and ten thousand years hence, if the species then exist, will be found marked with the same nice discriminations as at present. Is it therefore surprising, that two different species, placed in different quarters of the world, should have certain near resemblances to one another, without being bastards, or degenerated descendants, the one of the other, when the whole chain of created beings seem united to each other by such amazing gradations, that bespeak, not random chance and accidental degeneracy, but the magnificent design of an incomprehensively wise and omnipotent Creator?

The American Redstart builds frequently in low bushes, in the fork of a small sapling, or on the drooping branches of the elm, within a few feet of the ground; outwardly it is formed of flax well wound together, and moistened with its saliva, interspersed here and there with pieces of lichen, and lined with a very soft downy substance. The female lays five white eggs, sprinkled with gray, and specks of blackish. The male is extremely anxious for its preservation; and on a person's approaching the place will flirt about within a few feet, seeming greatly distressed.

The length of this species is five inches, extent six and a quarter; the general colour above is black, which covers the whole head and neck, and spreads on the upper part of the breast in a rounding form; where, as well as on the head and neck, it is glossed with steel blue; sides of the breast, below this black, the inside of the wings, and upper half of the wing-quills, are of a fine aurora colour; but the greater and lesser coverts of the wings being black conceal this; and the orange, or aurora colour, appears only as a broad transverse band across the wings; from thence to the tip they are brownish; the four middle feathers of the tail are black, the other eight of the same aurora colour,

and black, towards the tips; belly and vent white, slightly streaked with pale orange; legs black; bill of the true Muscicapa form, triangular at the base, beset with long bristles, and notched near the point. The female has not the rich aurora band across the wing; her back and crown is cinereous inclining to olive; the white below is not so pure; lateral feathers of the tail and sides of the breast greenish-yellow; middle tail feathers dusky brown. The young males of a year old, are almost exactly like the female, differing in these particulars, that they have a yellow band across the wings which the female has not, and the back is more tinged with brown; the lateral tail feathers are also yellow; middle ones brownish-black; inside of the wings yellow. On the third season they receive their complete colours; and as males of the second year, in nearly the dress of the female, are often seen in the woods, having the same notes as the full plumaged male, it has given occasion to some people to assert, that the females sing as well as the males; and others have taken them for another species. The fact, however, is as I have stated it. This bird is too little known by people in general to have any provincial name.—*Ib.*

DEER HUNTING IN SOUTH AMERICA.

As the haunts of the Fallow-Deer or Venays, are generally far from the abodes of men, and as they live in continual alarm from the depredations of the host of enemies, beasts, and birds of prey, and even reptiles, that beset them, but for the extraordinary instinct, or sagacity nature has endowed them with, for their preservation, the race must long since have been extinct. The impenetrable mountains of the Cordilleras are inhabited by immense herds of these animals, a species of the stag-kind, also, sometimes herds amongst them, though, as there seems a great aversion to this commixture, it must be considered as dictated by some necessary or instinctive policy. In those haunts are also to be met the *Cabia Montes* or Mountain-Goat, so much admired for its symmetry of form and delicious flavour. The intricate and steep pathways leading to their couching haunts, are mostly in clefts of rocky precipices, inaccessible to beasts of prey; and even a nimble dog can scarcely skip from rock to rock, to the outposts where their videttes are placed. Should any of them venture, they soon have occasion to repent their temerity.

It is not uncommon to see the jaguar, the tiger, &c. who have the hardihood to attack their outposts, hurled by the butting sentinels, the horned patriarchs of the flock, down a precipice of five or six hundred feet: so that, unless impelled by extreme hunger, they never attack them, except in their more open pastures. As those ravenous creatures are dormant during the day, the Deer are then partly secure. At night a straggler from the community is sure of its fate, as the jaguars hunt in packs, and are very quick-scented. One trait of the South American Deer is worthy of notice. In Europe a hunted Deer is driven from amongst the herd, and abandoned to its fate: here, the guardians of the flock, succour even a stranger of their community. I apprehend, that during the fawning season, the females and fawns suffer more than the males, as the young are obliged to be deposited in thickets, and the eagle and vulture are always watching over head. The large brown snake is also a great destroyer of them, but the jaguar and wild-cat are their worst enemies. There are about four bucks to one doe in the herd, which shows what destruction there must be of the latter. The colours of the Deer are various, and mostly beautifully dappled upon yellow, white, and dun. The stag is generally of a dusky brown. Hunting those animals is a source both of amusement and emolument to the Indian tribes in high latitudes, and they may be said to have brought it to high perfection. Having ascertained the haunts of the animals for about a week, the whole tribe assemble before day-break; some ascend the highest trees to mark their progress; others couch themselves under leaves, so as to impound them when they betake themselves to their fastnesses; then the whole tribe, men, women, and boys, stretch over a vast tract of country, and, assisted by their curs and horns, make every kind of hideous noises, obliging them to quit their grazing spots while the dew is on the ground. As the Deer assemble, they form in complete marching order, preceded by the elder or patriarchs, while the bucks of the second class bring up the rear, to protect the females and young, and repel any attacks. In this manner they arrive at their haunts; while the Indians, advancing in all directions, prevent their retreat, by closing up all the embouchures or openings, and while the Deer are forming in battle-array, prepare the instruments of destruction, viz. large lances, resinous torches, and nooses fixed to long poles. The women are also busy stuffing jaguar and tiger skins. The Indians having made proper crevices dug into the grit and brown rock which form the path, advance. The images of the wild beasts are now presented to intimidate the Deer from breaking, which the bucks no sooner perceive than they make a violent effort to strike them into the gulf,—their animosity to those beasts being such, that they often pass or leap over a man to get at them. The Indians then strike, and hurl them into the abyss below, where the women are

ready to hamstring or disable them before they recover from their stupor. When the hunters can no longer provoke them to rush on the stuffed tigers, &c., they make signals to those over-head, to throw lighted flambeaux amongst them. This causes them to make a desperate effort to escape, and when the Indians have hurled a sufficient number down the precipice, they suffer the females and the fawns, and some of the bucks, to escape. Indeed, they seem very much averse to destroying a doe at all, and always liberate the doe fawns. In those excursions they take on an average from four to five hundred. In taking the *Ciervo Grande*, or Large Stag, they seldom get more than from thirty to fifty; but of the Mountain-Goat they catch an immense number; they enter the caverns in the rocks by night, and pursue them by torch-light; and frequently yoke a great many of them together alive, although the flesh loses its flavour from the effort to domesticate them, and they scarcely ever lose their native wildness. A full-grown Fallow-Deer could be bought at Valencia for seven pisettos, or five shillings British. During the hunting season the Creoles sometimes hunt, but the Indians are more expert.—*Monthly Mag.*

ANECDOTE OF A DOG.

A French merchant, having some money due from a correspondent, set out on horseback, accompanied by his Dog, on purpose to receive it. Having settled the business to his satisfaction, he tied the bag of money before him, and began to return home. His faithful Dog, as if he entered into his master's feelings, frisked round the horse, barked and jumped, and seemed to participate his joy.

The merchant, after riding some miles, alighted to repose himself under an agreeable shade, and, taking the bag of money in his hand, laid it down by his side, under a hedge, and on remounting, forgot it. The Dog perceived his lapse of recollection, and wishing to rectify it, ran to fetch the bag; but it was too heavy for him to drag along. He then ran to his master, and, by crying, barking, and howling, seemed to remind him of his mistake. The merchant understood not his language, but the assiduous creature persevered in its efforts, and, after trying to stop the horse in vain, at last began to bite his heels.

The merchant, absorbed in some reverie, wholly overlooked the real object of his affectionate attendant's importunity, but entertained the alarming apprehension that he was gone mad. Full of this suspicion, in crossing a brook, he turned back to look if the Dog would drink. The animal was too intent on his master's business to think of itself; it continued to bark and bite with greater violence than before.

"Mercy!" cried the afflicted merchant, "it must be so; my poor Dog is certainly mad; what must I do? I must kill him, lest some greater misfortune befal me: but with what regret! Oh, could I find any one to perform this cruel office for me! but there is no time to lose; I myself may soon become the victim if I spare him." With these words, he drew a pistol from his pocket, and, with a trembling hand, took aim at his faithful servant. He turned away in agony as he fired; but his aim was too sure. The poor animal fell wounded, and, weltering in his blood, still endeavoured to crawl towards his master, as if to tax him with ingratitude. The merchant could not bear the sight; he spurred on his horse with a heart full of sorrow, and lamented that he had taken a journey which had cost him so dear. Still, however, the money never entered his mind; he only thought of his poor Dog, and tried to console himself with the reflection that he had prevented a greater evil, by despatching a mad animal, than he had suffered a calamity by his loss. This opiate to his wounded spirit, however, was ineffectual. "I am most unfortunate," said he to himself, "I had almost rather lost my money than my Dog." Saying this, he stretched out his hand to grasp his treasure. It was missing!—no bag was to be found. In an instant he opened his eyes to his rashness and folly. "Wretch that I am! I alone am to blame! I could not comprehend the admonition which my innocent and most faithful friend gave me, and I have sacrificed him for his zeal. He only wished to inform me of my mistake, and he has paid for his fidelity with his life."

Instantly he turned his horse, and went off at full gallop to the place where he had stopped. He saw, with half-averted eyes, the scene where the tragedy was acted; he perceived the traces of blood as he proceeded; he was oppressed and distracted; but in vain did he look for his Dog,—he was not to be seen on the road. At last he arrived at the spot where he had alighted. But what were his sensations! His heart was ready to bleed; he execrated himself in the madness of despair. The poor Dog, unable to follow his dear but cruel master, had determined to consecrate his last moments to his service. He had crawled, all bloody as he was, to the forgotten bag, and, in the agonies of death, he lay watching beside it. When he saw his master, he still testified his joy by the wagging of his tail—he could do no more—he tried to rise, but his strength was gone. The vital tide was ebbing fast; even the caresses of his master could not prolong his fate for a few moments. He stretched out his tongue to lick the

hand that was now fondling him in the agonies of regret, as if to seal forgiveness of the deed that had deprived him of life. He then cast a look of kindness on his master, and closed his eyes for ever.

From the New-England Galaxy.

SOME PASSAGES FROM THE DIARY OF A SPORTSMAN.

[Continued from page 66.]

The genuine Water-fowl Shooting, is no holiday work. It is very much like arming oneself from helm to heel, and of laying in a sufficient stock of resolution, and of "provant" (as Major Dalgetty has it) for a long and arduous campaign. The dainty dress, light boots, and short, slight gun of wood-craft or field-shooting, are out of the question. They would not stand the racket, (to employ another popular, but rather coarse phrase) an hour. You must encase your body in warm substantial garments, and incarcerate the lower extremities in high greaves of the toughest leather. The best gun for service is the long, heavy, double-barrel piece, which carries two ounces of shot a good half mile, and neither bruises your shoulder, nor prostrates you in the recoil. Always give preference to a double-barrel over any species of gun, for it gives you a double chance at the enemy—one "bang" at them as they are cosily swimming on the billow, in happy unconsciousness of peril, and one other "bang" when they start up from their repose in tumult and affright. When they do rise, be not hasty and over-eager, and so destroy good sport, and abuse the goods the "Gods provide thee," through imprudent anxiety—but be cool and collected—cock your gun promptly, but carefully—place the finger on the trigger with due precision—select with a provident eye the most desirable portion of the flock against which direct the *sight* of the barrel—and then pull away, and if you bring not down as many feathers as you can cleverly carry, then are you a most precious blockhead. Then, if you are shooting from the beach, order in your dog to tow them ashore, (if he is a true animal, he will not wait for the *order*, but with one grand plunge will seize the nearest bird, although ten yards from shore,) or if you are on the water, up with the "kill-lock," and row toward them. There they lie, scattered over the water, a rare and beautiful picture, which the elated shooter stops not to admire, however, for lo! he has stretched forth both hands over the gunwale, well employed in gathering in his wealth. Here lies the strong-winged Loon, the imperial cloud-cleaver himself! who was but yesterday fanning with his broad pinions the clear atmosphere above some snow-covered and far-distant mountain in the untrod regions of the North, or screaming to his now widowed mate around the silent waters of some Polar lake! But no more will his black head be aimed at by the Indian rifle or the savage arrow; and the Indian fisher, whose solitary canoe has often glided by him in the lake of the wilderness, will look for that lonely bird in vain. For his long pilgrimage on the earth has now reached its end, and his red blood is tinging the blue wave that washes the shore of New-England, and his far-travelled wing has been struck motionless by a Yankee musket.

Beautiful Mallard! Well might'st thou be vain of that lovely plumage—of those intense hues which rival the rare glories of the breaking dawn, or the decaying twilight of autumn, or the intermingled dyes which tinge the stripes of the showery bow. But, alas! that most venial vanity will be indulged no more, for the red drop of death is trembling on that polished beak, and thy heart's blood is oozing over thy downy bosom. Thine affrighted mate has left thee to breathe out thy last gasp on the billow; and on the wings of fear, (with a broken leg, however!) is now hastening away with the rest of thy brethren to the distant country of thy destination. Many a time will she, while swimming in some remote lagoon with her brood, (thy offspring) relate the cruel story of thy death, and caution them to make a wide circuit, whenever they shall chance to espy a small suspicious-looking wherry, with a long gun and a rough face peeping over its side, in the waters of Boston Bay. She will caution them to keep farther out to sea along that piratical coast, and thereby avoid that treacherous, picaroonish sort of craft, which there lies in wait, between two billows, ready to pounce upon and pop over the unwary cruiser.

The Loon, however, is not so easily taken as some young Sportsmen are apt to imagine. If the question is put to you, "will you have him now or wait till you get him," the chances are very considerable in favour of your replying in the language of the latter clause of the query. The invention and use of those prompt little percussion-caps, however, has caused sad havoc among them, of late years, and will have a tendency greatly to diminish their numbers, unless their sagacity teaches them to use greater caution in their migrations. They have so long been accustomed to baffle our tardy flint-locks, that they have grown quite presumptuous, and will suffer the shooter's boat to approach within ten waves of them, when *presto!* under they go, after the flash, but long before the explosion.

Indeed, by the time the shot shall have reached the point of their immersion, they have sculled away beneath the surface, and under the very boat itself, some hundred or two yards, and presently thrust up their black heads, far astern of the discomfited gunner. But the poor Loon now begins to discover that this confounded percussion powder, is much too quick for him, and it will no longer answer for him to rely upon his own celerity against so swift a traveller. This new enemy emits no flash, and drives a score of leaden messengers into him, before he begins to think of moving.

I remember my first pitched-battle against the Loon. If I had then known the "nature of the beast," as thoroughly as I do now, I should not have suffered myself to have been foiled in so unequal an encounter. Myself and a brother fowler, (both ardent, though inexperienced gunners,) had been traversing the woods for the better part of a long summer's day, and found ourselves about the hour of twilight, on the shore of a broad inland bay, whose sandy border skirted the woods around. Upon entering upon the beach, we were no less surprised than pleased to see two of these large birds, riding silently at anchor within pistol-shot of us. There they were, quietly rocking on the billow, like two gallant ships patiently watching the movements in a blockaded port. Their long crooked necks slowly swung round as we approached, and I could see the sharp, black eye of each cast upon us an inquisitive and fearless glance. Up went our guns to our shoulders, and bang they went with a simultaneous report. When the smoke blew aside, I expected to behold them both keeled over on their sides, well riddled with our shot. But here was a reckoning without mine host. They had both, like the "little Aerial," in the Water Witch, disappeared from the surface of the sea, but whether they had vanished into the air, or had plunged to the bottom of the deep, was a moot point with us. Presently, however, up rose my two gentlemen, for a commodity of fresh air, which they much needed after so long a sojourn among the fishes. My comrade and myself being resolved to give chase to the enemy, eagerly traversed the shore, in search of a wherry, skiff, or water craft of any description, in which to embark. In the mean time the enemy were securely riding again at anchor under the lee of a huge black rock, afar off, which rose abruptly from the bosom of the deep, and which the billows for ever encircled with their foamy wreaths. We heard their solitary scream coming from afar over the waters, and it seemed to us like a bold challenge, gallantly sent by the flag of one nation, to that of another hostile land. I thought of the day when the gallant Shannon fired her signal-gun on the coast of New-England, and sent in her courteous invitation to the no less gallant Chesapeake, then anchored in Boston harbour, to sail forth and do her utmost for the honour of her country. But our feathered challengers had somewhat the advantage of myself and comrade, inasmuch as a great watery gulf intervened between us, and although with the help of their strong wings they might come to us, we could not pass over to them without the aid of a boat. At length we found a small and clumsily-built wherry, lying bottom-upwards, far above high-water mark, which with our united strength we succeeded in launching. But the burning sun of summer had opened in it a thousand gaping seams, through which the element of water entered without opposition. But into it we stowed our persons and guns, which I was commissioned to serve in the battle, while my comrade, in the capacity of crew, sculled away as well as a fragment of an oar would permit, and at the same time bailed out the water, which gained upon us in the hold, with his hat. I ran out both of our pieces of ordnance, and opened a fire upon the enemy when within half gun-shot. But they showed the "white feather," or rather no feather at all, and dove at the flash, and emerged again, a good half mile distant. We pursued, fired again and again, with no better success, till they had allured us nearly out to sea, when they left us to find our way back again, as we could. In the meantime "with one stride came the dark." We ran our little vessel into a sandy cove of a small but beautiful island, and there spent the night under a tree in the woods. The isle was uninhabited, so comfortable lodgings and a good civilized supper, were not to be had for love or money,—but we made a fine blazing fire, by means of our guns, and broiled upon it the few birds we had shot, (chiefly wild pigeons) and passed a most merry night under the green wood tree. Indeed, we lit up a beacon that was seen for miles around, and a grand spectacle did the ruddy flames disclose, casting their glare upon the savage woods around, and the heaving billows of the sea. When the earliest streak of the dawning trembled in the east, we re-embarked, and returned to "the bosom of our afflicted families."

M.

MAZEPPA.

The dreadful punishment inflicted upon the hero of Lord Byron's Poem, has a demoniacal example in a newspaper called "Mercurius Politicus," printed in 1655. The narrative is dated from Hamburg.

"This last week several wagoners coming from Bresland to Silesia, on their way into the Duke of Saxony's country, perceived a stag with a man upon his back, run-

ning with all his might; coming near the wagons, he suddenly fell down, the poor man sitting upon his back made a pitiful complaint—how that the day before he was, by the Duke of Saxony, for killing a deer, condemned to be bound with chains upon that stag, his feet bound fast under the stag's belly with an iron chain soldered, and his hands so chained to the horns. The miserable man begged earnestly that they would shoot him, to put him out of his pain; but they durst not, fearing the Duke. Whilst they were talking with him, the stag got up again, and ran away with all his might. The wagoners computed that he had run in sixteen hours, not less than twenty-six Dutch miles in the least, which makes near one hundred of our English miles. The miseries which that poor creature did and must undergo, especially if the stag killed him not in running, cannot be expressed, hardly imagined."

INSTRUCTIONS TO YOUNG SPORTSMEN.

No. III.

In my former communication, I introduced you to the fields, and very unceremoniously left you there, while I reviewed several items, very important in the Sporting concern; and, having thus intruded on your patience a little, I must apologize, and resume my remarks on the duties before you.

The situation I left you in, I believe, was with your dogs at the "down charge," and you loading your gun—this being completed, you may give notice of your readiness to the dogs, by using the words, "hie on," or "hold off;" but in no instance permit them to leave your feet, until you have not only completed loading your gun, but also have fixed the cap on the tube—this precaution is necessary, as will appear hereafter.

Now commence beating the field, with a moderate and regular walk, going in zig-zag directions, until you have reached the extremity. It is requisite that you should always keep moving, and industriously hunt over the ground as well as your dogs—you will in this case be likely to spring a covey of birds,* which may have been passed unnoticed by the dogs,—and your industry tends much to keep up their ambition, especially towards the close of a laborious day's hunt. Should you have evidence that game is near, slacken your pace, and do not crowd the dogs, but give them every advantage of time and their judgment. Remember you cannot beat a stubble too well; no part of it should be omitted—but every nook and corner tried, until you are convinced no game is there. You are in search of game, and you had better hunt a few fields well, than overrun a large extent of country at a hurried and unsuccessful rate.

It frequently occurs, that birds do not like to rise before the Sportsman or his dogs, which may be accounted for, either by the tameness of the birds or the dampness of their feathers, and will only avoid an approaching object by merely running aside and squatting, until such noise as alarmed them, has ceased. In this case, a Sportsman must be indefatigable in hunting the ground, as such game, when sprung, generally affords fine sport. Sometimes, on very cold mornings, also, Partridges do not leave their roosts until quite late in the day. I have frequently discovered a covey huddled together in a roosting position before my dog's nose as late as ten o'clock, on severe mornings; consequently, there is not so much effluvium arising from them in this quiescent state, as when searching for food among the stubble;—hence the necessity of hunting a field close, and not at all times to depend on the perfection of your dogs to wind the birds at a long distance. A dog will sometimes pass within a very few feet to the windward of a covey of birds, and not heed them, especially should the wind be high; this every Sportsman knows,—and I am the more convinced of the necessity of adhering to this rule, from several cases which I have experienced;—one in particular may be mentioned, to show the truth of my remarks. One windy afternoon, I was hunting Partridges on ground which had every appearance of containing plenty of that kind of game; part of this was a very extensive wheat stubble, which I had entered but a few minutes, when my dogs soon convinced me game was in the field, or had just left it; but, after they had ranged from side to side to the extremity of the field, without success, I called them in and left it, and hunted several adjoining fields and thickets with the same success. My old dog, "the most faithful of his kind," re-entered the stubble, and ranged it again with the same energy as at first. I however noticed, that about the middle of the field was the spot where the birds had just left, for, on five or six times, the dogs, whenever unsuccessful in ranging, would return to this very spot, to ascertain and make themselves more sure that the birds had been there. I now thought I had tried every spot, both in the field and in those places adjoining it. I had incontestible evidence that the birds had been there within a short period, but I could not find them. I was

* I allude altogether to the Partridge,—and as this bird is called by different names in different sections of our country, I mean the Partridge of Pennsylvania and the Southern States—and the Quail of New-Jersey, New-York, and the Eastern States. In New-York and New-England the Pheasant is called the Partridge.

at a stand what to do—the dogs were also confounded—while my old dog looked me full in the face, wagged his tail, and then took a survey of the field—and by his dumb expression seemed to say, "the birds are not far off, and must be found." While in this dilemma, the old dog took one more snuff at the spot in the centre of the field, and then started off anew, direct for the fence,—and with cautious step, and nose down, he proceeded to scent every inch for the whole circumference of the field, most probably to ascertain whether the birds had run out of it or not, keeping not more than two feet from the fence. He had proceeded nearly around the field, until he came to a corner beside the public road—and while with one paw on the fence, in the act of leaping through it, he snuffed the tainted air, and set the long desired birds; these were lodged in a small tuft of grass, not more than five feet from the corner of the fence; and as appears, suffered the dog to pass within three feet of them without moving; and had he not gone to the windward, and between them and the fence, they would have remained undiscovered. I supposed they must have sprung of their own accord, previous to my entering the field, and after having settled again, remained unmoved, until I flushed them. Two hours had elapsed while hunting these birds, but my perseverance was rewarded by a large portion of the flock, which would have been lost, had my movements been more rapid. At any rate, it proves that a Sportsman should always move with cautious step, and if he has good dogs,* it is better to trust them nine times out of ten, than his own judgment.

When you are convinced that you are approaching a covey of birds, be quiet, and let your dogs rather exercise their own judgment, than by attempting to correct a *supposed* error, you make matters worse. Many persons think that it is a necessary part of hunting, to be constantly hallooing at and abusing their dogs. No Sportsman, however, does this;—noise not only confuses dogs, but frightens and puts the game on their alert; therefore avoid any thing of the kind, and, as you discover by the slackened pace, and short ranging of the dogs, that they are drawing the game, walk slowly towards them, and soon as they stand, give notice to them of your approach by using the word "To-ho."

This, now, is the season of the most exciting interest to the young Sportsman; his nerves evince it, and his heart begins to flutter with anxiety, and it requires no common fortitude to obtain self-command, that he may subdue these feelings. This is common to every beginner, and nothing but much practice will overcome them, and establish the *sang froid* and self-possession so highly important to success. This trepidation arises altogether from anxiety in the learner; he wishes to secure the game, and yet fearful to spring it, lest it should escape,—and he would almost shrink from the effort, as is evident, by his unwillingness to approach the spot. But let me advise the learner, the moment his dogs point, to walk slowly, and with undeviating step, right upon the game, as though he intended to kick them from the ground; but in no instance hurry yourself,—the difference of time between a deliberate, and a hurried walk, over a wide field, would be little over one minute, and the dog must be poor indeed, which would not wait that long for your approach;—besides, when you arrive at the goal, you are not excited by undue exercise, your nerves are more settled, and you feel deliberate—and you also stand less chance of prematurely flushing the covey, than if, by your hurry through the stubble or bushes, you create alarm. Recollect that the earth is a great conductor of sound to objects which lie near its surface, and the brushing of stubble, or the rustling of leaves, will most assuredly alarm the game, as well as make the dogs impatient.

When within thirty or forty yards of your dogs, set both cocks of your gun, and after you have sprung the game, single out *one* bird and fire—let your gun fall to the position of carrying it—single out another, bring up your gun, and fire a second time. In all this you may be deliberate, and yet astonishingly quick.

It is very important how you should carry your gun, especially when cocked, and you in company with a friend. The best and most ready plan is to let the left hand gripe the barrels, the right hand the breech, and the gun lie obliquely across you, with the muzzle elevated in a line with the head, and the butt resting near or against the right hip. This position requires but a little effort to throw the gun to the shoulder; when, if by accident it should be discharged, the contents are thrown harmlessly into the air.

In recommending you to cock both barrels of your gun, before you flush the game, I am aware that I run counter to the precepts of most writers, and that I come in collision with some (whom I could name) who are ready to reprobate me at once for this advice. But let us hear both sides, before we condemn either. Nearly every work on Sporting which I have read, were produced by English authors; consequently their advice is restricted to the game of their own country. Some of these advise, that when the Sportsman has sprung the game, he must deliberately

* I have supposed that the Sportsman is in possession of good dogs, as these are the most important auxiliaries in hunting;—but if he does not possess them, it is useless to attempt a successful excursion. For the manner of educating dogs, see "Treatise on Breaking Dogs," pages 160 and 186, Vol. I. of this work.

cock one barrel, and fire—bring down his gun—cock the other barrel, bring it to the shoulder, and fire again. Others recommend the learner, in order to insure deliberation, that so soon as the birds have sprung, to speak the words "hold, halt, now!" before firing, intending by this to give time for self-command, and the bird a proper distance. Another relates, in exemplification of his rules, an anecdote of a Frenchman, who was so deliberate in his movements, that after the bird had sprung, he would take from his pocket his snuff-box—take a pinch of snuff—replace the box—and then kill his bird. Now, all this looks well enough on paper, and does to give temporary amusement to the reader; but let me tell you, young Sportsman, this cannot be so—and if you are to account yourself proficient in the science of shooting flying, only when you can do these things, you may at once despair of ever becoming a good shot. I can see no use of laying down rules which can never be followed, nor giving advice which the preceptors themselves never follow; it only adds more difficulties, already numerous, to be surmounted by the learner, and trammels his way with perplexities which should never exist.

It certainly would amuse me much, to have a few excursions after the Pheasant and Partridges of this country, with those authors who recommend such rules. I would like to see how often they would exercise them, and with what success. It argues one of two things, viz. that these authors are only *theoretically* acquainted with shooting, or, that the English game-birds bear no comparison in the velocity of their flight, with those of this country; the latter case, however, is the most probable,—and to prove the fallacy of such rules, permit me to remark, that one of our Partridges, at the most moderate computation, will fly, when in possession of strength, and the vigour of maturity, forty-five feet in a second of time, and a Pheasant sixty feet. Now supposing on an average, the bird will rise from you twenty feet, and the expression of the words, "hold, halt, now," will consume three seconds more, the Partridge will have departed a distance of one hundred and fifty-five feet, or upwards of fifty yards, before you shoot —and the Pheasant sixty-seven yards. Now tell me, what success would a Sportsman have, who would follow this rule. It is well enough to avoid all danger, and it would be an excellent thing would Sportsmen never cock their guns until the game has sprung—but as I said before, no one follows it, and a rule is no rule unless it governs in some instances—hence I advise the young Sportsman to adopt the common usage, and if he is careful in other respects, I will vouch that no accident will accrue by cocking his gun prior to starting the game.

After you have fired, bring your dogs to the "down charge" again, and without moving from the place put your gun in the attitude of loading, and fix your eyes on the flying game to the utmost stretch, and mark their direction by some standing object. Should not those birds which you fire at fall, it may, as it often has happened, that although mortally wounded, they have gone off in company with their fellows, sometimes to the extremity of their flight, and again but a short distance, and fall dead, which more particularly proves the necessity of watching the birds until their flight is completed, or they are hidden from your view by some intervening object. Should you have discharged but one barrel, do not commence loading again, until you have uncocked your gun, by letting it down upon the tube; and I would impress on you by all means not to remove the broken fragments of the cap from the discharged barrel, until after you have reloaded, and are about to put another cap on. This advice will appear more weighty, when I remark, that explosions sometimes occur when the powder is poured from the flask into the empty barrel, in consequence of a spark having remained at the bottom of the barrel: this may be avoided, by not removing the broken cap, inasmuch as the force of the percussion being so great, as generally to drive a portion of the cap into the tube, which so effectually keeps out air, that should a spark have remained in the barrel, it would become extinguished as instantaneously by pouring in the powder, as if saturated by water; but, should you remove these broken fragments, and open a passage for the air to circulate freely, it would fan and keep a spark alive, and an explosion would certainly be the consequence: the stoppage of this tube by the copper, acts precisely as the thumb on the touch-hole when firing ordnance.

I witnessed an explosion but a short time since, which had like to have proved serious, being as I supposed occasioned by drawing back the cock, and removing the broken cap; the powder exploded when poured in, burst, and drove the flask from the hand of the shooter to the distance of thirty yards,—but fortunately the only injury was a scorching of the face and hands. Such accidents can only be accounted for on the above principle; for this reason, I condemn those small vents which appear at the sides of some percussion guns.

Being prepared a second time, give the dogs the usual sign of readiness, and then follow, in direct line, the flight of the birds. Observe the same gait at all times, and let your dogs quarter the ground well until you reach the desired spot. In this way you may recover many a dead bird, which has fallen short of its intended flight, and not unfrequently encounter another covey. In getting over fences, I have seen the hurried Sportsman accidentally discharge his gun, by having it cocked, and his finger, unheeded by

him, on or just before the trigger, and the exertion required to surmount the fence, would give impulse to his finger, and thus discharge the gun. I have also seen guns discharged by leaping from a fence, when the trigger would strike a small twig, while in the act of jumping. All of this should be avoided, and it only requires forethought and system to lessen these dangers; therefore ascertain at every fence if your gun is uncocked—and then you may either gripe the gun at the breech with the right hand, and put it over the fence first, and use your left for the purpose of climbing; or place your gun first on the opposite side of the fence before you get over; and it would be well when you attempt a post and rail fence, always to go to the right, but close to the post,—you then have a solid place for your feet, and a good purchase for your left hand. I.

POINTER AND SETTER DOGS,

OR, WHICH ARE BEST.

There is a great diversity of opinion, among Sportsmen, in regard to the choice of Dogs,—and this arises, not so much from the superiority of one breed over the other, as from fancy or habit. The relation which a Dog bears to his master, confirms the opinions of the latter as to the merits of that particular breed; and no argument scarcely, or circumstance, will influence him to make a change, or alter his feelings—so firmly are his opinions settled by the continual intercourse with his Dog, and the pleasures enjoyed from his services: hence the tenacity with which some adhere to the Pointer, while others regard the Setter as the most superior Dog.

A man is apt to form his judgment from the qualities of the first Dog he owns; and, as this may prove good or bad, he accordingly approves or condemns the breed. Should this Dog be only of mediocrity, his good parts are admired and magnified,—while his bad qualities, owing to the attachment and charitable feelings of his master, are overlooked or suppressed, and being but a novice, he is not acquainted with the requisites which constitute a first rate Dog, or look beyond the qualities of his Dog for greater perfection. He recollects his more early essays after game, and the gratification he derived at the first point his Dog made,—the admiration of his noble propensities in quartering the fields, and drawing the game,—the infatuation excited by killing the first bird,—and the bag of game produced by his energy and the instrumentality of his faithful companion: all these rivet his affections on his Dog, and no matter how much the qualities of other Dogs may be praised by their masters, he feels convinced that his is no way inferior. All of these feelings grow out of first impressions, which proverbially are called "the strongest;" and should this Dog have been either a Setter or a Pointer, his future choice of that breed to which this animal belonged, to the latest day of his life, is influenced by the retrospection of early enjoyment, so much is judgment biased by attachment.

It may be well to remark, however, that the superiority of one breed of Dogs over the other, may be tested according to the description of country to be hunted over, and may properly be divided thus:—In open, dry, and mountainous districts, especially in a warm climate, preference may be given to the Pointer Dog;—but in low, wet, cold, and woodland countries, the Setter is the most desirable. The former, by reason of the slight covering of hair, and thinness of skin, is not so easily excited by thirst, and can withstand fatigue during warm days longer than the Setter,—but the latter being covered by much more hair, is protected from wet, cold, and briars; his feet are thickly matted with hair, and are not liable to be injured by hard or sharp substances protruding from the earth. In consequence of this thick covering, his thirst returns frequently, which makes it necessary to hunt in the vicinity of water. This also more particularly accounts for this animal's fondness for water, into which, at all times and seasons, he shows a willingness to enter; his covering creates fever; this thirst; and as fleas are generally in numbers on him, his fondness for the water is more the effect of necessity than of natural inclination.

Under these circumstances, then, I think the Setter better adapted for hunting in the United States; the geographical part of it is more suited to his constitution and qualities, and that portion of game usually sought after, being snipe, woodcock, and partridge, and which are mostly found in low-lands and thickets, that, abstractedly from a choice of fancy, it appears to me, to say the least, every Sportsman should be provided with one Setter Dog.

The Pointer was not used for Sporting purposes until a much later period than the Setter Dog, and it appears was not introduced into England until the beginning of the last century. Indeed, the Setter is supposed to have had its origin in England, and is said by some authors to have been produced, by crossing the Bloodhound with the Land Spaniel, or Springer; while others contend their production to have arisen between the Newfoundland Dog and the Spanish Pointer. The latter, however, is the most probable. But all this is so involved in uncertainty, that it is given as conjecture. The purity of the Pointer, however,

is well established, being a distinct breed in Spain, Portugal, and France.

A well-formed Setter, is certainly a beautiful Dog; his body is well proportioned; his long, flowing hair gives a softness of expression to the whole figure,—the pendant and silken ears hang gracefully beside the head, which become more interesting when in playful mood, or excited by the words or actions of his master, he elevates and moves them in token of fondness and respect,—while the benignant countenance bespeaks that generosity so prominent in the Newfoundland Dog; and the tail, the prettiest ornament of the animal, completes the finish of the whole. The Pointer is neat and cleanly, but does not possess the grace and playfulness of the Setter.

I do not think there is much difference in the inherent properties of these two breeds; but there does exist, sometimes, a difference,—and this, as has been stated before, is caused more by local circumstances than any thing else. My choice of one in preference to the other, would be governed altogether by the latter, although the best Dogs I ever owned, or indeed ever saw, were Setters.

When I choose a Dog, I always select one with a broad head—black eyes, and nose, if possible—a nose full and blunt, not straight, but somewhat sunk between the eyes—a high forehead, and a broad chest,—and if he should incline to be bony and lank, I make no exception. His colour should be mostly white, with a proportion of dark spots, as he can be seen at a much greater distance through shrubbery or high grass. The fashionable colour now prevalent, is the brown and yellow Dogs; but I think their popularity will subside, in consequence of the difficulties before mentioned. I do not like the black Dogs,—they look well enough for companions, but they are generally headstrong and savage; my dislike, however, may be no proof that these qualities exist throughout that kind, although nearly all the black Dogs I ever knew or hunted with, were of the same ungovernable and ferocious dispositions. I have often noticed, that the most hardy and indefatigable Dogs, were those which had a dark brown or iron colour, prevailing sometimes in large and again in small spots, on a dark gray ground, over the whole animal, from the nose to the extremity of the tail. This, however, is a bad colour for the Sportsman. I had a Dog of this description once,—and owing to his colour and staunchness, I was often perplexed, and suffered much loss of time, when hunting with him in thickets; at which time, I have frequently passed within a few feet of him, and pursued my way for half a mile, and then retraced my steps to the last spot I saw him, and remained hallooing and calling him from a supposed distance for a long time, or until I accidentally flushed the game, when I have found myself within perhaps twenty feet of him, at a stand, where he had remained unmoved until the game had sprung; and his colour being so like the faded leaves and other objects, that he was undiscovered by me until he broke from his stand.

There are some who give preference to those Pointers or Setters which possess double noses, as they are called, but which in fact is only a separation of the nostrils by a longitudinal groove for a short distance up the nose. This choice must arise more from the singularity and rarity of the animal, than from superior excellence. I have seen several of this description very superior; one especially, of most beautiful proportions and reputed excellence, owned in New-York, by a gentleman and a first rate Sportsman.

The Pointer, when standing at game, (unless otherwise taught) always keeps himself erect and stiff, with the tail and head usually more elevated than his body,—but the Setter will oftentimes squat on his hinder parts, and sometimes crouch completely on his belly, when coming suddenly on the game, and in this way drag after them until sufficiently near to remain stationary; his head and tail are seldom raised on a level with his back, and it is said by some writers, that they are more inclined to crouching according to the purity of their blood.

Cross breeds between the Pointer and Setter are condemned by some,—but for my part, I advocate them, as uniting the qualities of the two, and when both are good, it is reasonable to suppose the offspring will be good also.

D.

MY FAVOURITE WALKS.

Mr. Editor:

So fond am I of rural things, that I frequently take solitary walks in the neighbourhood of this city, through woods, fields, and secluded lanes, many of which form the most delightful promenades during the present warm weather. My excursions are not very limited, but sometimes extend for miles into the country;—this is more generally the case, when I visit our sister state—and it is astonishing how soon the visitor there, may avoid the wearisome bustle of a great city, and find solitude and calmness in the shady and extensive woods of New-Jersey,—where nought but the carols of the most lovely birds, disturb the reigning quietness, save now and then, favoured by the western breeze, the hum and confusion of the city floats swiftly over the waters.

A Sportsman, (if I may so speak,) from my infancy, I delight more especially to direct my footsteps to the com-

mon haunts of game,—not unseasonably to destroy, but to admire and observe the progress of this portion of creation, which affords some of earth's best pleasures; and it is of no little satisfaction, that my solitary movements are frequently enlivened by the voice of my favourite bird, the Partridge. But a few days since, during one of my walks, I heard and saw five pairs of these interesting birds, within a mile of one of the ferries opposite Philadelphia. Whether they had been sustained through the winter by some benevolent hand, or had survived its severities from their own resources, I am not able to say;—but to those who delight in these things, it must be gratifying to learn of the existence of numbers of these birds; indeed the prospect of game for next winter is favourable—but I fondly hope that Sportsmen will exercise patience and forbearance towards the Partridge for one more year, and let time repair the ravages of past winters; we then shall have our usual fall shooting in plenitude. It is also to be hoped that farmers will avoid the destruction of the nests of these birds, during the harvest season; for, want of care in mowers by cutting over the nest, and sometimes destroying the parent birds, numbers of broods are prevented, which might be avoided by cutting around, and leaving sufficient covering about the nest; the old birds would then rear their young with as much perseverance as though they had not been disturbed.

Often, too, in the precincts of this city, when passing some retired spot, I startle the Pheasant, which by the wonderful swiftness of its flight, is lost to view in a moment. How closely allied are solitude and the Pheasant!—and when it occurs that I spring this bird from its shady retreat, although by emerging from the thicket I would be brought in view of the habitations of an hundred thousand souls, yet I feel myself removed, far from civilization, to the loneliness of the mountains.

I have also been much diverted at the timidity and pranks of the Rabbit; these little animals may always be seen at a short distance from town, towards the close of day, when the dazzling influence of the sun cannot affect their sight, along the paths and by-roads which lead through bush-lands, and beside woods. Frequently, when seated on a stump, or little mound of earth, I have been amused, on the approach of twilight, at the egress of these little creatures from the bushes into the path,—when, by a sudden stop, they will sometimes rise on their hinder-feet, prick forward their suspicious ears, to listen if danger is near, then give a few jumps, and act in this manner again. Should one be intruded on at this time, by another of its kind, a salutation commonly ensues, by a low, growling noise, and a thumping of the earth with their hinder-feet, and after eyeing each other for a few moments, one will lead off, and, followed quickly by the other, will make a few rapid and circuitous routes through the bushes, and return again to the first spot, and undergo the same ceremony as before. Sometimes a third coney will present himself, and divide the couple, and interchange salutations with one of the former party. Their actions, I think, are performed more in a playful than an angry mood.

Such are the little incidents which occur in my favourite walks, and these, as well as a thousand pleasing trifles, may be witnessed, from every bird, that flits from limb to limb, or bush to bush, by the lover of rural things.

RUSTICUS.

Philadelphia, June 8th, 1832.

CATCHING WILD ASSES IN EGYPT.

On both sides of the path, (midway between Cairo and Surat,) troops of Wild Asses stood looking at us, and seemingly unfearful of any hostility, almost inviting our approach. They were beautifully striped, but seemed dull and stupid to a degree greater than that of their kind elsewhere. I however expected an active scene in their pursuit, but on the contrary, the manner of catching them is dull, spiritless, and unanimated; and I had nothing to do but look on. To a person of my ardent temperament, this was of course tiresome to the last degree. On a signal being given, an attendant on Suleiman advanced from the train, and drew from his pouch, a bottle filled to the brim with a black muddy liquid, in taste and effect resembling opium. This he poured (through a reed, in order to regulate the quantity) on a Papyrus leaf, which he plucked from the road-side, and placed it in a conspicuous situation; the animals for which it was intended keeping aloof, but attentively regarding our motions. Suleiman then called aloud, "*kiachef osmyn kraal,*" and we gallopped on about ten paces from the place of our former halt; we stopped our camels again, and looked round; the Wild Asses had eagerly advanced towards the spot where the Papyrus lay, and one of them, after a taste, swallowed it altogether. He then snorted, looked wistfully towards us for more, and advanced a few steps, but in a little time fell down stupified from the effects of his draught. Two or three of our brawniest mamalukes then dismounted, with a huge cloak of leather, and laying the animal in it, carefully tied him up, leaving merely a breathing place, and strapped him on to my camel like a bale of goods; a ceremony at which I could not restrain myself from laughing heartily.—*Buchanan's* "*Letters from the Andaman Continent.*"

ESQUIMAUX DOG.

ESQUIMAUX DOG.

Canis familiaris Borealis.—Desmarest.

[Plate IX. Vol. 2.]

This variety of the Dog most nearly resembles the Shepherd's Dog, and the Wolf Dog. The ears are short and erect; the tail is bushy, and carried in a graceful curve over the back: in this particular, the Esquimaux Dog principally differs from the wolf of the same district, whose tail is carried between his legs in running. The tail *turned upward* is the distinguishing characteristic of the domestic Dog, of every variety. It has been considered by some naturalists, that these Dogs are wolves in a state of domestication. The anatomy of both, for the most part, corresponds; the wolf is, however, larger, and more muscular. The average height of the Esquimaux Dog is one foot, ten inches; the length of the body, from the occiput (the back of the head) to the insertion of the tail, two feet three inches; and of the tail itself, one foot, one inch. Some of the Esquimaux Dogs are brindled, some black and white, some almost entirely black, some of yellowish tinge, and some are of a dingy red. Their coat is thick and furry; the hair, in winter, being from three to four inches long: nature has also provided them with an under coating of close soft wool, at that season, which they lose in spring; so that they endure their climate with comparative comfort. They never bark; but have a long melancholy howl, like the wolf. They are familiar and domestic; but snarl and fight amongst themselves, much more than Dogs in general.

The Esquimaux, a race of people inhabiting the most northerly parts of the American continent, and the adjoining islands, are dependent upon the services of this faithful species of Dog, for most of the few comforts of their lives; for assistance in the chase; for carrying burdens; and for their rapid and certain conveyance over the trackless snows of their dreary plains. The Dogs, subjected to a constant dependance upon their masters, receiving scanty food and abundant chastisement, assist them in hunting the seal, the rein-deer, and the bear. In the summer, a single Dog carries a weight of thirty pounds, in attending his master in the pursuit of game: in winter, yoked in numbers to heavy sledges, they drag five or six persons at the rate of seven or eight miles an hour, and will perform journeys of sixty miles a day. What the rein-deer is to the Laplander, this Dog is to the Esquimaux. He is a faithful slave, who grumbles, but does not rebel; whose endurance never tires, and whose fidelity is never shaken by blows and starving. These animals are obstinate in their nature; but the women, who treat them with more

kindness than the men, and who nurse them in their helpless state, or when they are sick, have an unbounded command over their affections; and can thus catch them at any time, and entice them from their huts, to yoke them to their sledges, even when they are suffering the severest hunger, and have no resource but to eat the most tough and filthy remains of animal matter which they can espy on their laborious journeys.

The mode in which the Esquimaux Dogs are employed in drawing the sledge, is described in a very striking manner, by Captain Parry, in his "Journal of a Second Voyage for the Discovery of a North-West Passage."

"When drawing a sledge, the Dogs have a simple harness (*annoo*) of deer or seal skin, going round the neck by one bight, and another for each of the fore legs, with a single thong leading over the back, and attached to the sledge as a trace. Though they appear at first sight to be huddled together without regard to regularity, there is, in fact, considerable attention paid to their arrangement, particularly in the selection of a Dog of peculiar spirit and sagacity, who is allowed, by a longer trace, to precede the rest as leader, and to whom, in turning to the right or left, the driver usually addresses himself. This choice is made without regard to age or sex; and the rest of the Dogs take precedency according to their training or sagacity, the least effective being put nearest the sledge. The leader is usually from eighteen to twenty feet from the fore part of the sledge, and the hindmost Dog about half that distance; so that when ten or twelve are running together, several are nearly abreast of each other. The driver sits quite low, on the fore part of the sledge, with his feet overhanging the snow on one side, and having in his hand a whip, of which the handle, made either of wood, bone, or whalebone, is eighteen inches, and the lash more than as many feet, in length; the part of the thong next the handle is platted a little way down to stiffen it, and give it a spring, on which much of its use depends; and that which composes the lash is chewed by the women to make it flexible in frosty weather. The men acquire from their youth considerable expertness in the use of this whip, the lash of which is left to trail along the ground by the side of the sledge, and with which they can inflict a very severe blow on any Dog at pleasure. Though the Dogs are kept in training entirely by fear of the whip, and, indeed, without it, would soon have their own way, its immediate effect is always detrimental to the draught of the sledge; for not only does the individual that is struck, draw back and slacken his trace, but generally turns upon his next neighbour, and this passing on to the next, occasions a general divergency, accompanied by the usual yelping and showing of the teeth. The Dogs then come together again

by degrees, and the draught of the sledge is accelerated; but even at the best of times, by this rude mode of draught, the traces of one-third of the Dogs form an angle of thirty or forty degrees on each side of the direction in which the sledge is advancing. Another great inconvenience attending the Esquimaux method of putting the Dogs to, besides that of not employing their strength to the best advantage, is the constant entanglement of the traces by the Dogs repeatedly doubling under from side to side to avoid the whip; so that, after running a few miles, the traces always require to be taken off and cleaned.

"In directing the sledge, the whip acts no very essential part, the driver for this purpose using certain words, as the carters do with us, to make the Dogs turn more to the right or left. To these a good leader attends with admirable precision, especially if his own name be repeated at the same time, looking behind over his shoulder with great earnestness, as if listening to the directions of the driver. On a beaten track, or even where a single foot or sledge-mark is occasionally discernible, there is not the slightest trouble in guiding the Dogs: for even in the darkest night, and in the heaviest snow-drift, there is little or no danger of their losing the road, the leader keeping his nose near the ground, and directing the rest with wonderful sagacity. Where, however, there is no beaten track, the best driver among them makes a terribly circuitous course, as all the Esquimaux roads plainly show; these generally occupying an extent of six miles, when, with a horse and sledge, the journey would scarcely have amounted to five. On rough ground, as among hummocks of ice, the sledge would be frequently overturned, or altogether stopped, if the driver did not repeatedly get off, and by lifting or drawing it to one side, steer clear of those accidents. At all times, indeed, except on a smooth and well made road, he is pretty constantly employed thus with his feet, which, together with his never-ceasing vociferations, and frequent use of the whip, renders the driving of one of these vehicles by no means a pleasant or easy task. When the driver wishes to stop the sledge, he calls out 'Wo, woa,' exactly as our carters do, but the attention paid to this command depends altogether on his ability to enforce it. If the weight is small, and the journey homeward, the Dogs are not to be thus delayed; the driver is therefore obliged to dig his heels into the snow to obstruct their progress, and having thus succeeded in stopping them, he stands up with one leg before the foremost cross-piece of the sledge, till by means of laying the whip gently over each Dog's head, he has made them all lie down. He then takes care not to quit his position, so that should the Dogs set off, he is thrown upon the sledge instead of being left behind by them.

"With heavy loads, the Dogs draw best with one of their own people, especially a woman, walking a little way a-head; and in this case they are sometimes enticed to mend their pace by holding a mitten to the mouth, and then making the motion of cutting it with a knife, and throwing it on the snow, when the Dogs, mistaking it for meat, hasten forward to pick it up. The women also entice them from the huts in a similar manner. The rate at which they travel depends, of course, on the weight they have to draw, and the road on which their journey is performed. When the latter is level, and very hard and smooth, constituting what, in other parts of North America, is called 'good sleighing,' six or seven Dogs will draw from eight to ten hundred weight, at the rate of seven or eight miles an hour, for several hours together; and will easily, under these circumstances, perform a journey of fifty or sixty miles a day. On untrodden snow, five and twenty or thirty miles would be a good day's journey. The same number of well-fed Dogs, with a weight of only five or six hundred pounds, (that of the sledge included,) are almost unmanageable, and will, on a smooth road, run any way they please, at the rate of ten miles an hour. The work performed by a greater number of Dogs is, however, by no means in a proportion to this, owing to the imperfect mode already described, of employing the strength of these sturdy creatures, and to the more frequent snarling and fighting occasioned by an increase of numbers."

The Dogs of the Esquimaux offer to us a striking example of the great services which the race of Dogs has rendered to mankind in the progress of civilization. The inhabitants of the shores of Baffin's Bay, and of those still more inclement regions to which discovery ships have recently penetrated, are perhaps never destined to advance much farther than their present condition in the scale of humanity. Their climate forbids them attempting the gratification of any desires beyond the commonest animal wants. In the short summers, they hunt the rein-deer for a stock of food and clothing; during the long winter, when the stern demands of hunger drive them from their snow-huts, to search for provisions, they still find a supply in the rein-deer, in the seals, which lie in holes under the ice of the lakes, and in the bears which prowl about on the frozen shores of the sea. Without the exquisite scent and the undaunted courage of their Dogs, the several objects of their chase could never be obtained in sufficient quantities, during the winter, to supply the wants of the inhabitants; nor could the men be conveyed from place to place over the snow, with that celerity which greatly contributes to their success in hunting. In drawing the sledges, if the Dogs scent a single rein-deer, even a quarter of a mile distant, they gallop off furiously in the direction of the scent; and

the animal is soon within the reach of the unerring arrow of the hunter. They will discover a seal-hole entirely by the smell, at a very great distance. Their desire to attack the ferocious bear is so great, that the word *nennook*, which signifies that animal, is often used to encourage them, when running in a sledge: two or three Dogs, led forward by a man, will fasten upon the largest bear without hesitation. They are eager to chase every animal but the wolf; and of him they appear to have an instinctive terror, which manifests itself, on his approach, in a loud and long-continued howl. Certainly there is no animal which combines so many properties useful to his master as the Dog of the Esquimaux.

With the exception of that most serviceable property of drawing and carrying burthens, most of the various races of Dogs have, in a similar manner, assisted mankind in subduing many wild beasts of the earth. This result, without which civilization must have very slowly advanced, could not have been effected without the assistance of the Dog. Cuvier, the great French naturalist, says, "the Dog is the most complete, the most remarkable, and the most useful conquest ever made by man. Every species has become our property; each individual is altogether devoted to his master, assumes his manners, knows and defends his goods, and remains attached to him until death, and all this proceeds neither from want nor constraint, but solely from true gratitude and real friendship. The swiftness, the strength, and the scent of the Dog, have created for man a powerful ally against other animals, and were perhaps necessary to the establishment of society. He is the only animal which has followed man through every region of the earth." Buffon says, "the art of training Dogs seems to have been the first invented by man; and the result of it was the conquest and peaceable possession of the earth." But this art would never have become perfectly successful and completely universal, had there not been in the race of Dogs a natural desire to be useful to man; an aptitude for his society; a strong and spontaneous longing for his friendship. Burchell, a distinguished traveller in Africa, has observed, that we never see in various countries an equal familiarity with other quadrupeds, according to the habits, the taste, or the caprices of different nations; and he thence concludes, that the universal friendship of the man and the Dog, must be the result of the laws of nature. With singular propriety, therefore, has the name *Canis familiaris* been assigned by Linnæus to the species.

The Dogs of the Esquimaux lead always a fatiguing, and often a very painful life. They are not, like the Siberian Dogs, (to which they bear a considerable resemblance,) turned out in the summer to seek their own sustenance: at that period they are fat and vigorous; for they have abundance of *kaow*, or the skin and part of the blubber of the walrus. But their feeding in winter is very precarious. Their masters have but little to spare; and the Dogs become miserably thin, at a time when the severest labour is imposed upon them. It is not, therefore, surprising that the shouts and blows of their drivers have no effect in preventing them from rushing out of their road, to pick up whatever they can descry; or that they are constantly creeping into the huts, to pilfer any thing within their reach: their chances of success are but small; for the people within the huts are equally keen in the protection of their stores, and they spend half their time in shouting out the names of the intruders (for the Dogs have all names,) and in driving them forth by the most unmerciful blows. This is a singular, but, from the difference of circumstances, not unnatural contrast to the treatment of Dogs described in Homer. The princes of the Trojan war allowed their Dogs to wait under their tables, to gather up the remains of their feasts. In the twenty-third book of the Iliad, it is mentioned that Patroclus had no fewer than nine such humble retainers. The same princes, too, we learn in the tenth book of the Odyssey, carried home to their Dogs the fragments which fell from the tables of their entertainers. Amongst these fragments were the soft and fine parts of bread, called *apomagdalia*, with which the guests wiped their fingers when the meal was finished, and which were always a perquisite to the Dogs. In allusion, probably, to this custom, the woman of Canaan says, "the Dogs eat of the crumbs which fall from their master's table."

The hunger which the Esquimaux Dogs feel so severely in winter, is somewhat increased by the temperature they live in. In cold climates, and in temperate ones in cold weather, animal food is required in larger quantities than in warm weather, and in temperate regions. The only mode which the Dogs have of assuaging or deceiving the calls of hunger, is by the distention of the stomach with any filth which they can find to swallow. The wolves and rein-deer of the polar countries, when pressed by hunger in the winter, devour clay. The Kamschatkans sometimes distend their stomachs with saw-dust. Humboldt relates that the Otomacs, during the periodical inundations of the rivers of South America, when the depth of the water prevents their customary occupation of fishing, appease their hunger, even for several months, by swallowing a fine unctuous clay, slightly baked. Many other instances of this nature are given in Dr. Elliotson's learned and amusing Notes to his edition of Blumenbach's Physiology. The painful sense of hunger is generally regarded as the effect of the contraction of the stomach, which ef-

feet is constantly increased by a draught of cold liquid. Captain Parry mentions that in winter the Esquimaux Dogs will not drink water, unless it happens to be oily. They know, by experience, that their cravings would be increased by this indulgence, and they lick some clean snow as a substitute, which produces a less contraction of the stomach than water. Dogs, in general, can bear hunger for a very long time, without any serious injury, having a supply of some substance for the distention of their stomachs. It is mentioned in the Memoirs of the French Academy of Sciences, that a bitch which had been shut up and forgotten in a country-house, was sustained for forty days without any nourishment beyond the wool of a quilt, which she had torn in pieces. A Dog has been known to live thirty-six days without food, or substitute for food.

We have already noticed that the Esquimaux Dogs do not bark. This is a peculiarity of many varieties of the Dog; but very rarely of those which are natives of temperate countries. Probably this is an effect of high as well as of low temperature. Sonnini says, that the people of Upper Egypt have a species of Dog resembling the Shepherd's Dog, with voices so weak, that their barking can scarcely be heard. Columbus observed, that the voices of the Dogs which he took to the West Indies became feeble. In both cases the tropical climate probably produced this result. The prophet Isaiah alludes to this peculiarity, in his denunciation of idle instructors: "They are dumb Dogs, and cannot bark."

The Newfoundland Dogs, one of the most active and sagacious varieties, are employed in their native districts to draw carts and sledges, laden with wood and fish, and to perform a variety of useful offices in the place of the horse. In many of the northern countries, the bold and powerful races of Dogs are thus rendered peculiarly valuable. A century ago, nearly all the travelling intercourse of Canada was carried on by Dogs. The superiority of the Newfoundland Dogs in swimming is well known: they are semi-webbed between the toes, which mechanism of the foot is of the greatest advantage to them; presenting, as it does, an extended surface to press away the water from behind, and then collapsing, when it is drawn forward, previous to making the stroke. The hereditary habits of these Dogs, too, eminently qualify them for swimming, or rowing through the water, as the action is more correctly described by Sir Everard Home. It is thus that we have the most abundant instances of human life being saved by these generous and courageous animals. All Dogs, however, can swim; although some dislike the water, and take to it with difficulty at the bidding of their masters. The Bull Dog would appear the least likely to combat with a heavy sea, as the Newfoundland Dogs often do; and yet the following circumstance is well authenticated:—On board a ship, which struck upon a rock near the shore during a gale, there were three Dogs, two of the Newfoundland variety, and an English Bull Dog, rather small in growth, but very firmly built, and strong. It was important to have a rope carried ashore: and as no boat could live for an instant in the breakers towards the land, it was thought that one of the Newfoundland Dogs might succeed; but he was not able to struggle with the waves, and perished. The other Newfoundland Dog, upon being thrown overboard with the rope, shared a similar fate. But the Bull Dog, though not habituated to the water, swam triumphantly to land, and thus saved the lives of the persons on board. Among them was his master, a military officer, who still has the Dog in his possession.

[*Lib. Ent. Knowl.*

MICROSCOPIC VIEW OF SPIDERS WEAVING THEIR WEBS.

Of all the beautiful discoveries with which we have become acquainted, through the progress of the physical sciences, there are none more striking than those of the microscope, or which may be studied with greater ease. The application of a powerful lens to any of those minute objects which we have it daily in our power to examine, exhibits a scene of wonder, of which those who have never witnessed it cannot form an adequate idea.

For example, the construction of Cobwebs has in all ages been lightly esteemed: nevertheless, for simplicity of machinery and neatness of execution, they cannot be surpassed by the art of man. The spinners are the apparatus through which, by a most wonderful process, the spider draws its thread. Each spinner is pierced, like the plate of a wire-drawer, with a multitude of holes, so numerously and exquisitely fine, that a space often not bigger than a pin's point includes above a thousand. Through each of these holes proceeds a thread of an inconceivable tenuity, which, immediately after issuing from the orifice, unites with all the other threads, from the same spinner into one. Hence from each spinner proceeds a compound thread; and these four threads, at the distance of about one-tenth of an inch from the apex of the spinner, again unite, and form the thread we are accustomed to see, which the spider uses in forming its web. Thus a spider's web, even spun by the smallest species, and when so fine that it is

almost imperceptible to our senses, is not, as we suppose, a single line, but a rope composed of at least four thousand strands. But to feel all the wonders of this fact, we must follow Leuwenhoeck in one of his calculations on the subject. This renowned microscopic observer found, by an accurate estimation, that the threads of the minutest spiders, some of which are not larger than a grain of sand, are so fine, that four millions of them would not exceed in thickness one of the hairs of his beard! Now we know that each of these threads is composed of above 4,000 still finer. It follows, therefore, that above 16,000 millions of the finest threads which issue from such spiders, are not, altogether, thicker than a human hair.

In the earlier part of last century, Bon of Languedoc, fabricated a pair of stockings and a pair of gloves from the threads of spiders. They were nearly as strong as silk, and of a beautiful gray colour!

THE HORSE.

[Concluded from page 82.]

The Race Horse.

"THERE is much dispute with regard to the origin of the *thorough-bred Horse.* By some he is traced through both sire and dam to Eastern parentage; others believe him to be the native Horse, improved and perfected by judicious crossing with the Barb, the Turk, or the Arabian.

It must, on the whole, be allowed, that the present thorough-bred Horse is of foreign extraction, improved and perfected by the influence of the climate, and by diligent cultivation. There are some exceptions, as in the case of Sampson and Bay-Malton, in each of whom, although the best Horses of their day, there was a cross of vulgar blood; but they are only exceptions to a general rule.

It must not be objected, that the number of Eastern Horses imported is far too small to produce so numerous a progeny. It will be recollected that the thousands of wild Horses on the plains of South America, descended from only two stallions and four mares, which the early Spanish adventurers left there.

Whatever may be the truth as to the origin of the Race Horse, the strictest attention has for the last fifty years been paid to pedigree. In the descent of almost every modern racer, not the slightest flaw can be discovered; or when, with the splendid exception of Sampson and Bay-Malton, one drop of common blood has mingled with the pure stream, it has been immediately detected in the inferiority of form, and deficiency of bottom; and it has required two or three generations to wipe away the stain, and get rid of its consequences.

The Racer is generally distinguished by his beautiful Arabian head;—his fine, and finely-set-on-neck;—his oblique, lengthened shoulders,—well-bent hinder-legs,—his ample, muscular quarters;—his flat legs, rather short from the knee downwards, although not always so deep as they should be;—and his long and elastic pastern.

The Racer, however, with the most beautiful form, is occasionally a sorry animal. There is sometimes a want of energy in an apparently faultless shape, for which there is no accounting; but there are two points among those just enumerated, which will rarely or never deceive—a well-placed shoulder, and a well-bent hinder leg.

The Darley Arabian.

The Darley Arabian was the parent of the Racing stock. He was purchased by Mr. Darley's brother, at Aleppo, and was bred in the neighbouring desert of Palmyra. His figure contains every point, without much show, which could be desired in a Turf Horse.

The immediate descendants of this invaluable Horse, were the Devonshire or Flying Childers; the Bleeding or Bartlett's Childers, who was never trained; Almanzor, and others.

The two Childers were the means through which the blood and fame of their sire were widely circulated, and from them descended another Childers, Blaze, Snap, Sampson, Eclipse, and a host of excellent Horses.

Flying Childers.

The Devonshire or Flying Childers, so called from the name of his breeder, Mr. Childers, of Carr-House, and the sale of him to the Duke of Devonshire, was the fleetest Horse of his day. He was at first trained as a hunter, but the superior speed and courage which he discovered, caused him to be soon transferred to the Turf. Common report affirms, that he could run a mile in a minute; but there is no authentic record of this. Childers ran over the round course at Newmarket (three miles, six furlongs, and ninety-three yards) in six minutes and forty seconds, and the Beacon course, (four miles, one furlong, and one hundred and thirty-eight yards,) in seven minutes and thirty seconds.

In October, 1741, at the Curragh meeting in Ireland, Mr. Wilde engaged to ride one hundred and twenty-seven miles in nine hours. He performed it in six hours and

twenty-one minutes. He employed ten horses, and, allowing for mounting and dismounting, and a moment for refreshment, he rode for six hours at the rate of twenty miles an hour.

Mr. Thornhill, in 1745, exceeded this, for he rode from Stilton to London and back, and again to Stilton, being two hundred and thirteen miles, in eleven hours and thirty-four minutes, which is, after allowing the least possible time for changing Horses, twenty miles an hour for eleven hours, and on the turnpike road and uneven ground.

Mr. Shaftoe, in 1762, with ten Horses, and five of them ridden twice, accomplished fifty miles and a quarter, in one hour and forty-nine minutes. In 1763, Mr. Shaftoe won a more extraordinary match. He was to procure a person to ride one hundred miles a day, on any one Horse each day, for twenty-nine days together, and to have any number of Horses not exceeding twenty-nine. He accomplished it on fourteen Horses, and on one day he rode one hundred and sixty miles, on account of the tiring of his first Horse.

Mr. Hull's Quibbler, however, afforded the most extraordinary instance on record, of the stoutness as well as speed of the Race Horse. In December, 1786, he ran twenty-three miles round the flat at Newmarket, in fifty-seven minutes and ten seconds.

Eclipse. (*English.*)

Eclipse was got by Marsk, a grandson of Bartlett's Childers.

Of the beauty, yet peculiarity of his form, much has been said. The very great size, obliquity, and lowness of his shoulders, were the objects of general remark—with the shortness of his fore-quarters, his ample and finely proportioned quarters, and the swelling muscles of his fore-arm and thigh. Of his speed, no correct estimate can be formed, for he never met with an opponent sufficiently fleet to put it to the test.

He was bred by the Duke of Cumberland, and sold at his death to Mr. Wildman, a sheep salesman, for seventy-five guineas. Colonel O'Kelly purchased a share of him from Wildman. In the spring of the following year, when the reputation of this wonderful animal was at its height, O'Kelly wished to become sole owner of him, and bought the remaining share for one thousand pounds.

Eclipse was what is termed a thick-winded Horse, and puffed and roared so as to be heard at a considerable distance. For this or some other cause, he was not brought on the Turf until he was five years old.

O'Kelly, aware of his Horse's powers, had backed him freely on his first race in May, 1769. This excited curiosity, or perhaps, roused suspicion, and some persons attempted to watch one of his trials. Mr. John Lawrence says, that "they were a little too late; but they found an old woman who gave them all the information they wanted. On inquiring whether she had seen a race, she replied, that "she could not tell whether it was a race or not, but that she had just seen a Horse with white legs running away at a monstrous rate, and another Horse a great way behind, trying to run after him; but she was sure he never would catch the white-legged Horse if he ran to the world's end.

The first heat was easily won, when O'Kelly, observing that the rider had been pulling at Eclipse during the whole of the race, offered a wager that he placed the Horses in the next heat. This seemed a thing so highly improbable, that he immediately had bets to a large amount. Being called on to declare, he replied, "Eclipse first, and the rest no where!" The event justified his prediction: all the others were distanced by Eclipse with the greatest ease; or, in the language of the Turf, they had no place.

In the spring of the following year, he beat Mr. Wentworth's Bucephalus, who had never before been conquered. Two days afterwards he distanced Mr. Strode's Pensioner, a very good Horse: and, in the August of the same year, he won the great subscription at York. No Horse daring to enter against him, he closed his short career of seventeen months, by walking over the Newmarket course for the king's plate, on October the 18th, 1770. He was never beaten, nor ever paid forfeit, and won for his owner more than twenty-five thousand pounds."

*American Eclipse,**

"Is a chesnut Horse, with a star, and the near hind foot white; 15 hands 3 inches high; possessing a large share of bone and muscle, and excelling all the Racers of the day in the three great essentials of speed—stoutness or lastingness, and ability to carry weight. He was foaled on the 25th of May, 1814, at Dusoris, Long Island, on the farm of the late Gen. Nathaniel Coles. At five months old, while a suckling, he gave his owner such a sample of stride, strength, and speed, that he was at that time named 'American Eclipse.' He was sired by Duroc; his dam Miller's Damsel, by Messenger; his grandam the English mare Pot8os, imported in 1795, then three years old, by William Constable, Esq. and bred by Lord Grosvenor; sired by Pot8os, and Pot8os by the celebrated Horse 'Eclipse,'—his g. g. dam by Gimcrack; Gimcrack by Cripple, and Cripple by the Arabian of Lord Godolphin.

* Extracted from the American Turf Register.

While a colt he was not confined, but during the winter season turned out every fair day. He was first shod in the spring, when three years old.

In June, 1819, he won the Jockey Club's purse of $500, running the four mile heats over the Bath course, beating Mr. Purdy's Horse Little John, by the Virginia Potomac, Mr. Bond's Horse Eclipse, by First Consul; and Mr. Potter's Horse, James Fitz James, by Sir Archy.

In October, 1819, he again ran the four mile heats at Bath, winning the purse of $500, beating Mr. Purdy's Horse, Little John, Mr. Schenck's Horse, Fearnought, and Mr. Bond's Colt; the two latter being withdrawn the second heat. The Bath course measured fifteen links over a mile: the first heat of this race was run in eight minutes and thirteen seconds, and the second in eight minutes and eight seconds.

In the spring of 1820, Eclipse stood to mares on Long Island, at $12 50 the season. In the spring of 1821, he again covered as a common stallion, at $12 50 the season, and covered eighty-seven mares, nor was it contemplated to bring him again upon the Turf,—but the legislature of the state of New-York having new-modelled the law respecting Racing, and a society being re-organized specially for the improvement of our breed of Horses, Mr. Van Ranst was induced again to put Eclipse in training for the four mile heats to be run over the New Union course, eight miles from Brooklyn, and near the Jamaica turnpike, in Oct. of that year.

From an opinion, long entertained by Sportsmen, that covering renders a Horse unfit for the race, the friends of Eclipse questioned the policy of again running him; but the event proved that, so far as he was concerned, the opinion was unfounded.

The races commenced the 15th of October, 1821, when four Horses started for the purse of $500, to run the four mile heats: viz. American Eclipse, Mr. Sleeper's brown mare, 'Lady Lightfoot,' by 'Sir Archy;' Mr. Schenck's Horse, 'Flag of Truce,' by 'Sir Solomon;' and Mr. Schomp's Horse, 'Heart of Oak.' The two last named Horses were drawn after the first heat, and 'Lady Lightfoot' was distanced in the second, being nine years old—she had run upwards of twenty races, some very severe ones, and was out of order.

The bets at starting, were two to one on the mare. The mare led until the last quarter of the first heat, when Eclipse passed her, coming in two lengths ahead. In the second heat, Eclipse passed her in running the third mile, and from that time left her alone. The time was, first heat, eight minutes and four seconds; the second heat, eight minutes and two seconds, and the course measured thirty feet over a mile.

In the following week, Eclipse was exhibited at the annual exhibition of the New-York County Agricultural Society, and received the Society's first premium, $50, for the best stallion.

In May, 1822, Eclipse won the purse of $700 for four mile heats at the Union course, beating Mr. Badger's five year old Horse, Sir Walter, by Hickory. A bet of considerable amount was made by the owners of the two Horses on the first heat, which, with the second heat, was won by Eclipse. Time, first heat, seven minutes and fifty-four seconds; second heat, eight minutes.

In October, 1822, he again ran the four mile heats at the Union course, for the $1000 purse, which he won, beating a second time, Mr. Badger's Horse, Sir Walter; Mr. Sleeper's bay mare, the Duchess of Marlborough, by Sir Archy, and Mr. Jackson's mare, Slow and Easy, by Duroc. The first heat was run in seven minutes and fifty-eight seconds, when the two mares were withdrawn, and Sir Walter stopping short in the second heat, Eclipse came in at his leisure. A day or two previous to this race, a challenge appeared in the New-York papers, by Mr. James J. Harrison, of Brunswick, (Va.) in which he offered to 'run Sir Charles against the American Eclipse, over the Washington course, four mile heats, agreeably to the rules of the course, for five or ten thousand dollars.' This challenge was promptly accepted by Mr. Van Ranst, who, as two sums were named by Mr. Harrison, chose the greatest, that the object of the contest might correspond with the fame of the Horses.

The forfeit money, $5000 each, having been deposited, the time for running was fixed for the 20th of November. At the hour of starting, both Horses were brought out, and the riders mounted; but instead of running agreeably to the challenge, Mr. Harrison gave notice that as his Horse had met with an accident, he would pay the forfeit. He at the same time proposed to run a single four mile heat, for $1500 each, which being instantly agreed to, both Horses started, Eclipse taking the lead. On the last round, Sir Charles broke down. The two first rounds were run in one minute and fifty-five seconds each, and the heat in eight minutes and four seconds. In this race, Sir Charles carried 120 lbs.; Eclipse 126 lbs.

In the evening of the same day, William R. Johnson, Esq. of Petersburg, Va. offered to produce a Horse on the last Tuesday in May, 1823, to run the four mile heats against Eclipse, over the Union course, on Long Island, agreeably to the rules of that course, for $20,000 a side, $3000 forfeit.

This challenge was immediately accepted by Mr. John C. Stephens; in consequence of which Col. Johnson, on the day mentioned, appeared on the race with a four year old chesnut colt called Henry, (John Richards, intended for

the race, having been lamed,) about fifteen hands and one inch high, which had been bred by Mr. Lemuel Long, near Halifax, North Carolina. Henry was sired by Sir Archy; his dam by Diomed; her dam by Bell-Air; hers by Pilgrim; hers by Valiant; hers by Janus; hers by Jolly Roger—imported Horses. About half past 12 o'clock, both Horses started. Eclipse was rode by Wm. Crafts; Henry by a young lad. Henry took the lead, and maintained it through the heat. They came in together, Henry beating Eclipse by half a length, but apparently 'hard in hand.'—Bets on the second heat three to one on Henry.

During the second heat, Eclipse was rode by Mr. Purdy. Henry again took the lead, and kept it until the last quarter of the third mile, when Purdy made a push, and Eclipse passed his rival at the commencement of the fourth mile. An attempt was made by Henry's rider to recover his ground, but in vain. He was beat by about thirty feet. Henry reined in on passing the distance pole, the loss of the heat being evident.

When the Horses were brought out for the third heat, the great trainer, Arthur Taylor, mounted Henry, instead of the boy who rode him the two first heats. On starting, Eclipse took the lead, which he kept to the end of the race, coming in about three lengths ahead of Henry, both at their utmost speed—Henry, in this heat, having been reserved for the last quarter.

The time of running the three heats, as given by the judges, Gen. Ridgely, of Baltimore, Capt. Cox, of Washington, and John Allen, Esq. of Philadelphia, was as follows:

First heat, 7 min. 37 sec.—second heat, 7 min. 49 sec.—third heat, 8 min. 24 sec.

Twelve miles in 23 minutes and 50 seconds.

The weights carried were—Eclipse, 126 lbs. Henry, 108. Weights, according to racing calculations, are so nicely regulated to correspond with age, that no advantage was given to Henry, as has been said; on the contrary, according to the long established usage of weights on the Southern courses, now introduced at New-York, Eclipse had an advantage of 8 lbs—more than a distance—7 lbs. = 240 yds.

On the day previous to the Race, a number of gentlemen visited the course with a surveyor, and finding it thirty feet over a mile, reduced it as nearly to a mile as could conveniently be done, leaving it still eighteen inches over. It is said, however, from the difference in the nature of the ground, to be four or five seconds quicker than the Tree Hill course.

Immediately after the race, Col. W. R. Johnson challenged J. C. Stevens, Esq. and the friends of Eclipse, to run Henry against Eclipse the ensuing fall, over the Washington course, for any sum from twenty to fifty thousand dollars—forfeit, ten thousand dollars. The challenge was declined, and the resolution then announced has been adhered to, 'never, on any consideration, to risk the life or reputation of the noble animal, whose generous and almost incredible exertions, have gained for the *north* so signal a victory, and for himself, such well-earned and never-fading renown.'

Eclipse was accordingly withdrawn from the Turf."

The Hunter.

"There are few agriculturalists who have not a little liking for the sports of the field, and who do not fancy rich music in the cry of the hounds. To what extent it may be prudent for them to indulge in these sports circumstances must decide, and they deserve the most serious consideration. Few can, or, if they could, ought to keep a Hunter. There are temptations to expense in the field, and to expense after the chase, which it may be difficult to withstand. The Hunter, however, or the Hunting Horse, *i. e.* the Horse on which a farmer, if he be not a professed Sportsman, may occasionally with pleasure, and without disgrace, follow the hounds, is in value and beauty next to the Racer.

He should seldom be under fifteen or more than sixteen hands high; below this standard he cannot always sufficiently measure the object before him, and above this, he is apt to be leggy and awkward at his work.

The foot of the Hunter is a most material point. It is of consequence in the Racer, yet it is a notorious fact, that many of the best thorough-bred Horses have had very indifferent feet. The narrow contracted foot, is the curse of much of the racing blood. The work of the Racer, however, is all performed on the Turf, and his bad feet may scarcely incommode him; but the foot of the Hunter is battered over many a flinty road and stony field, and if not particularly good, will soon be disabled and ruined.

The position of the feet requires some attention in the Hunter. They should, if possible, stand straight. If they turn a little outward there is no serious objection, but if they turn inward his action cannot be safe, particularly when he is fatigued or over-weighted.

The body should be short and compact, compared with that of the Race Horse, that he may not in his gallop take too extended a stride. This would be a serious disadvantage in a long day and with a heavy rider, from the stress on the pasterns; and more serious when going over clayey poached ground, during the winter months. The compact, short-strided Horse will almost skim the surface,

while the feet of the longer-reached animal will sink deep, and he will wear himself out by efforts to disengage himself.

Every horseman knows how much more enduring is a short-bodied Horse in climbing hills, although perhaps not quite so much in descending them. This is the secret of suiting the *Race Horse* to his course; and unfolds the apparent mystery of a decidedly superior Horse on a flat and straight course, being often beaten by a little Horse, with far shorter strides, on uneven ground, and with several turnings.

The loins should be broad;—the quarters long;—the thighs muscular;—the hocks well bent, and well under the Horse.

The reader needs not be told how essential temper and courage are. A hot, irritable brute is a perfect nuisance, and the coward that will scarcely face the slightest fence exposes his owner to ridicule.

It is true that the farmer may enjoy a good day's sport on the Horse that carries him to market, or possibly occasionally performs more menial drudgery; but the frothy lather with which such a Horse is covered in the early part of the day, evinces undeniable inferiority. There is, however, one point on which the untrained Horse has the advantage. Accustomed to all weathers, he rarely suffers, when, after a sharp burst, there comes a sudden check, and the pampered and shivering stabled Horse, is exposed with him for a considerable time to a piercing north-easter. The one cares nothing about it; the other may carry home the seeds of dangerous disease.

The Hunter may be fairly ridden twice, or, if not with any very hard days, three times in the week; but, after a thoroughly hard day, and evident distress, three or four days' rest should be allowed. They who are merciful to their Horses, allow about thirty days' work in the course of the season; with gentle exercise on each of the intermediate days, and particularly a sweat on the day before hunting.

It is very conceivable, and does sometimes happen, that entering as fully as his master into the sports of the day, the Horse disdains to yield to fatigue, and voluntarily presses on, until nature is exhausted, and he falls and dies; but, much oftener, the poor animal has, intelligibly enough, hinted his distress; unwilling to give in, yet painfully and faulteringly holding on. The merciless rider, rather than give up one hour's enjoyment, tortures him with whip and spur, until he drops and expires.

Although the Hunter may be unwilling to relinquish the chase, he who 'is merciful to his beast,' will soon recognize the symptoms of excessive and dangerous distress. To the drooping pace and staggering gait, and heaving flank, and heavy bearing on hand, will be added a very peculiar noise. The inexperienced person will fancy it to be the beating of the heart; but that has almost ceased to beat, and the lungs are becoming gorged with blood. It is the convulsive motion of the muscles of the belly, called into violent action to assist in the now laborious office of breathing. The man who proceeds a single mile after this ought to suffer the punishment he is inflicting.

Let the rider instantly dismount. If he has a lancet, and skill to use it, let him take away five or six quarts of blood; or if he has no lancet, let him cut the burs with his pocket-knife as deeply as he can. The lungs may be thus relieved, and the Horse may be able to crawl home. Then, or before, if possible, let some powerful cordial be administered. Cordials are, generally speaking, the disgrace and bane of the stable; but here, and almost here alone, they are truly valuable. They may rouse the exhausted powers of nature; they may prevent what the medical man would call the reaction of inflammation; although they are the veriest poison when inflammation has commenced.

A favourite Hunter fell after a long burst, and lay stretched out, convulsed, and apparently dying. His master procured a bottle of good sherry, from the house of a neighbouring friend, and poured it down the animal's throat. The Horse immediately began to revive; soon after got up; walked home, and gradually recovered. The Sportsman may not always be able to get this, but he may obtain a cordial-ball from the nearest farrier, or he may beg a little ginger from some good house-wife, and mix it with warm ale, or he may give the ale alone, or strengthened with a little rum or gin. When he gets home, or if he stops at the first stable he finds, let the Horse be put into *the coolest place*, and then well clothed and diligently rubbed about the legs and belly. The practice of putting the animal thus distressed, into 'a comfortable, warm stable,' and excluding every breath of air, has destroyed many valuable Horses.

The Farmer's Horse.

The Farmer's Horse is an animal of *all-work*—to be ridden occasionally to market or for pleasure, but to be principally employed for draught. He should be higher than the Road Horse: about fifteen hands and two inches may be taken as the best standard. A Horse with a shoulder thicker, lower, and less standing than would be chosen in a Hackney, will better suit the collar; and collar-work will be chiefly required of him. A stout, compact Horse should be selected, yet not a heavy cloddy one. Some blood will be desirable, but the half-bred Horse will generally best suit the farmer's purposes. He should have

weight enough to throw into the collar, and sufficient activity to get over the ground.

Farmers are now beginning to be aware of the superiority of the moderate sized, strong, active Horse, over the bulkier, but slower animal of former days. It is not only in harvest, and when a frosty morning must be seized to cart manure, that this is perceived, but, in the every-day work of the farm, the saving of time, and the saving of provender, too, will be very considerable in the course of a year.

It has often been said, that a Horse used much for draught is neither pleasant nor safe for the saddle. The little farmer does not want a showy, complete Hackney. He will be content if he is tolerably well curried; and (if he has taken a little care in the choice of his Horse; has selected one with sound feet, shoulders not too thick, and legs not too much under him; and, if he keeps him in good condition, and does not scandalously over-weight him,) the five days carting or harrow-work, will not, to any material degree, unfit him for the saddle; especially if the rider bear in mind what we have termed the golden rule of horsemanship, always *a little to feel* the mouth of the animal he is upon.

A farmer, and, more particularly, a small farmer, will prefer a mare to a gelding, both for riding and driving. She will not cost him so much at first; and he will get a great deal more work out of her. There can be no doubt that, taking bulk for bulk, a mare is stronger, and more lasting than a gelding; and in addition to this, the farmer has her to breed from.

The mare needs not be idle while she is breeding. She may be worked moderately almost to the period of her foaling, and with benefit rather than otherwise: nor is there occasion that much of her time should be lost even while she is suckling. If she is put to Horse in June, the foaling time will be in the fall, and the loss of labour will occur, in the most leisure time of the year.

The farmer, however, too frequently thinks that any mare will do to breed from; and, if he can find a great prancing stallion, with a high sounding name, and loaded with fat, he reckons on having a valuable colt: and should he fail, he attributes the fault to the Horse, and not to his own want of judgment.

The foal should be well taken care of for the first two years. It is bad policy to stint or half starve the growing colt.

The colt may be earlier handled, but should not be broken-in until three years old; and then the very best breaking-in for the Carriage-Horse is to make him earn a little of his living. Let him be put to harrow or light plough. Going over the rough ground will teach him to lift his feet well, and give him that high and showy action, excusable in a Carriage-Horse, but excusable in no other. In the succeeding winter, he will be perfectly ready for the town or country market.

The Road Horse, or Hackney.

The Road Horse! more difficult to meet with in perfection than the Hunter or the Courser. There are many reasons for this. The price of the Hackney, or the Horse of all-work, is so low, that he who has a good one will not part with him; and it is by mere accident that he can be obtained. There are also several faults that can be overlooked in the Hunter, but which the Road Horse must not have. The Hunter may start, may be awkward in his walk, or even his trot; he may have thrushes or corns; but if he can go a good slapping pace, and has wind and bottom, we can put up with him, or prize him: but the Hackney, if he be worth having, must have good fore-legs, and good hinder ones too; he must be sound on his feet; even-tempered; no starter; quiet in whatever situation he may be placed; not hard in hand; and if there be one thing more than any other, in which the possesser, and, in his own estimation at least, the tolerable judge of the Horse, is in error, it is the *action* of the Road-Horse: 'Let him lift his legs well,' it is said, 'and he will never come down.'

In proportion, however, as he lifts his legs well, will be the force with which he puts them down again; the jar and concussion to the rider; and the battering and wear and tear of the feet. A horse with too great 'knee action' will not always be speedy; he will rarely be pleasant to ride, and he will not, in the long run, be safer than others. The careless *daisy-cutter*, however pleasant on the Turf, should indeed be avoided, unless the neck of the rider be previously insured; yet it is a rule, not often understood, and sometimes disputed, but which experience will fully confirm,—that the safety of the Horse depends a great deal more on the manner in which he puts his feet down, than on that in which he lifts them up;—more on the foot being placed at once flat on the ground, or perhaps the heel coming first in contact with it, than on the highest and most splendid action.

When the toe first touches the ground, it may be easily supposed that the Horse will occasionally topple over. An unexpected obstacle will throw the centre of gravity forward, and down he will come. If the toe dig into the ground before the foot is firmly placed, a little thing will cause a trip and a fall.

Let the farmer who has a stumbler look at the shoes of his Horse. In what part is the wear and tear?—The toe

of the shoe will become round, or even be altogether gone, when the heel is scarcely touched.

For pleasant riding, and for safety, also, a Hackney *should not carry his legs too high.* His going a little *too* near to the ground is not always to be considered as an insuperable objection. The question is, does he dig his toe into the ground?

Mount him, and put him to the test. Take up his feet and examine them. If the shoe, after having been on a week or a fortnight, is not unnecessarily worn at the toe, and you feel him put his foot flat on the ground, do not scruple to buy him; nay, esteem him a 'choice-gifted Hackney,' although he may not have the lofty action which some have erroneously thought so necessary.

Every Horse, however, is liable to fall, and hence comes the golden rule of riding, '*Never trust to your Horse,*'—always feel his mouth lightly. He does wrong who constantly pulls might and main; he will soon spoil the Horse's mouth, and render his own work always necessary. He does worse who carelessly throws the reins on the neck of the Horse. *Always feel the mouth lightly;* you will thus be able to give the animal assistance *immediately*, before he is too much off his centre, and when a little check will save him. By this constant gentle *feeling* you will likewise induce him to carry his head well, than which few things are more conducive to the beautiful, safe, and easy going of the Horse.

The Road Horse should be high in the fore-hand; round in the barrel; and deep in the chest; the saddle will not then press too forward, but the girths will remain, *without crupper*, firmly fixed in their proper place.

A Hackney is far more valuable for the pleasantness of his paces, and his safety, good temper, and endurance, than for his speed. We rarely want to go more than eight or ten miles in an hour; and, on a journey, not more than six or seven. The fast Horses, and especially the fast trotters, are not often easy in their paces, and although they may peform very extraordinary feats, are disabled and worthless, when the slower Horse is in his prime.

Ponies.

The *Welsh Poney* is one of the most beautiful little animals that can be imagined. He has a small head, high withers, deep yet round barrel, short joints, flat legs, and good round feet. He will live on any fare, and can never be tired out.

The *New Foresters* are generally ill-made, large-headed, short-necked, ragged hipped, but hardy, safe, and useful. The catching of these Ponies is as great a trial of skill, as the hunting of the wild Horses on the Pampas of South America, and a greater one of patience.

The *Exmoor Ponies*, although generally ugly enough, are hardy and useful. A well known Sportsman says, that he rode one of them half a dozen miles; and never felt such power and action in so small a compass before. To show his accomplishments, he was turned over a gate at least eight inches higher than his back; and his owner, who rides fourteen stone, travelled on him from Bristol to South Molton, eighty-six miles, beating the coach which runs the same road.

The *Highland Poney* is far inferior to the Galloway. The head is large; he is low before, long in the back, short in the legs, upright in the pasterns, rather slow in his paces, and not pleasant to ride, except in the canter. His habits make him hardy, for he is rarely housed in the summer or the winter. The Rev. Mr. Hall, in his 'Travels in Scotland,' says, that 'when these animals come to any boggy piece of ground, they first put their nose to it, and then pat on it in a peculiar way with one of their fore feet, and from the sound and feel of the ground, they know whether it will bear them. They do the same with ice, and determine in a minute whether they will proceed.'

The *Shetland Poney* called in Scotland *Sheltie*, an inhabitant of the extremest northern Scottish isles, is a very diminutive animal, sometimes not seven hands and a half in height, and rarely exceeding nine and a half. He is often exceedingly beautiful, with a small head, good-tempered countenance, a short neck, fine towards the throttle, shoulders low and thick, (in so little a creature far from being a blemish,) back short, quarters extended and powerful, legs flat and fine, and pretty round feet. They possess immense strength for their size, will fatten upon any thing; and are perfectly docile. One of them nine hands, or three feet in height, carried a man of twelve stone forty miles in one day."

CLASSIFICATION OF ANIMALS.

MAMMALIA.

ORDER

1. Bimana.——Man with two hands.
2. Quadrumana.——Animals with four hands—apes, baboons, monkeys, and makis. (Lemurs.)
3. Cheiroptera.——Mammiferous animals, in which the fore feet form membranes for flying—bats.

ORDER

1. Digitata.——Mammiferous animals with separate toes on all four feet. This order is divided, according to the difference of the teeth, into the following three families:—

(A.) *Glires.*—With teeth like those of the mouse, as the squirrel, dormouse, and other mice; the marmot, guinea-pig, jerboa, hare, porcupine.

(B.) *Feræ.*—Carnivorous animals, properly so called, and some other genera, with teeth of the same kind—lions, dogs, &c., the bear, weasel, civet, opossum, hedgehog, shrew, mole.

(C.) *Bruta.*—Without teeth, or at least without fore teeth, &c.—sloth, ant eaters, armadilloes, manis.

5. Solidungula.——The horse, &c.
6. Bisulca.——Ruminating animals with cloven feet—the camel, the ox, the goat, the sheep, &c.
7. Multungula.——Mammiferous animals, for the most part very large, unshapely, with bristles of scattered hairs, with more than two toes on each foot—as swine, (which have usually four toes,) the tapir, elephant, rhinoceros, hippopotamus.
8. Palmata.——Mammiferous animals with feet made for swimming; subdivided, according to the different forms of their teeth into three families, as above:—

(A.) *Glires.*—The beaver.

(B.) *Feræ.*—Seals, otters, &c.

(C.) *Bruta.*—Duck-billed animals—walrus, manati; and from these the most suitable transition to order.

9. Cetacea.——Whales, warm-blooded animals, which have nothing in common with cold-blooded fishes, but the name; and the natural connexion of which, with mammifera, was correctly remarked even by Ray.

BIRDS.

(A.) *Land Birds.*

1. Accipitres.——Birds of prey; with strong hooked beaks, mostly with short, strong, knotty feet, and large, crooked, sharp claws—the vulture, the falcon, the owl.
2. Levirostres.——With short feet; and very large, thick, but mostly hollow, and therefore light bills—parrots, toucans, &c.
3. Pici.——With short feet; moderately long and small bills, and the tongue sometimes worm-shaped, sometimes thread-like—the wry neck, woodpecker, creeper, humming-bird, &c.

ORDER

4. Coraces.——With short feet, and the bill moderately long, tolerably strong, and convex above—ravens, crows, &c.
5. Passeres.——The singing birds, with swallows, &c. The feet short, the bill more or less conical, pointed, and of various length and thickness.
6. Gallinæ.——Birds with short feet, the bill somewhat convex above, and having a fleshy membrane at the base—the pigeon, the partridge, the pheasant, the peacock, the common cock, &c.
7. Struthiones.——Large land birds unsuited for flying—the ostrich, cassowary, and dodo.

(B.) *Water Birds.*

8. Grallæ.——Birds found in marshes with long feet; long, and almost cylindrical bills, and generally a long neck—the heron, the bittern, the plover, the rail, &c.
9. Anseres.——Swimming birds with oar-like feet; a short bill covered with skin, generally serrated at the edge, and terminated at the extremity of the upper jaw by a little hook—the swan, goose, duck, and the various species of sea fowl.

AMPHIBIA.

1. Reptiles.——Amphibia with four feet—tortoises, frogs, lizards.
2. Serpentes.—Serpents, without any external organs of motion.

FISHES.

(A.) *Cartilaginous, without true bones.*

(B.) *Bony Fishes—Fishes properly so called.*

(A.) 1. Chondropterygii.——Without an operculum, or covering of the gills—as the shark, the lamprey, the torpedo, the skate, the saw fish, &c.

(A.) 2. Branchiostegi.——With an operculum—the sturgeon, the globe fish, the sun fish, &c.

(B.) 3. Apodes.——Without ventral fins—the eel, the sword fish, &c.

(B.) 4. Jugulares.——Having the ventral in front of the pectoral fins—the haddock, the cod, the piper, &c.

(B.) 5. Thoracici.——Having the ventral immediately below the pectoral fin—the dory, the plaice, the flounder.

HUMMING BIRDS

ORDER

(B.) 6. ABDOMINALES.——Having the ventral behind the pectoral fins—the salmon, the trout, and most fresh water fish.

INSECTS.

1. COLEOPTERA.——Mostly with horny bodies—beetles.
2. HEMIPTERA.——With four wings, folded together crucically or longitudinally, hard for one-half, and almost like parchment—the cock-roach, the grass-hopper.
3. LEPIDOPTERA.——With soft hairy bodies, and four expanded wings, covered with coloured scales—butterflies.
4. NEUROPTERA.——With four transparent, net-shaped, or lattice-like wings—the ephemera or day-fly, the water moth.
5. HYMENOPTERA.——With four transparent veined wings—the wasp, the bee, the ant.
6. DIPTERA.——Insects with two wings, (uncovered)—the gnat, the various species of flies.
7. APTERA.——Insects without wings—the spider, the scorpion, the crab, the flea.

[In the above orders of Insects, Blumenbach has followed Linnæus.]

WORMS.

1. INTESTINA.——Long worms, without any evident external organs of motion—common earth worms, human worms, &c.
2. MOLLUSCA.——Naked, soft worms, with visible, and often very numerous extremities—the slug, sea blubber, sea anemone, &c.
3. TESTACEA.——Animals inhabiting shells, and much resembling those of the preceding order—the barnacle, the muscle, oyster, and most of the animals contained in the sea shells.
4. CRUSTACEA.——Animals having almost cartilaginous bodies; and in some cases, with a firm incalcareous crust—sea hedgehogs, sea stars, &c.
5. CORRALLIA.——Polypes and other zoophites inhabiting coral branches and similar structures.
6. ZOOPHITA.——Naked, plant-like animals, without any habitations; also the animalculæ of infusions.

[*Blumenbach's Nat. Hist.*

HUMMING-BIRD.

TROCHILUS COLUBRIS.

[Plate X. Vol. 2. Male and Female—size of life.]

Trochilus colubris, LINN. *Syst.* I, *p.* 191, *No.* 12.—*L'Oiseau mouche à gorge rouge de la Caroline*, BRISS. *Orn.* III. *p.* 716, *No.* 13, *t.* 36, *fig.* 6.—*Le Rubis*, BUFF. *Ois.* VI. *p.* 13.—*Humming-Bird*, CATESB. *Car.* I. 65.—*Red-throated Humming-Bird*, EDW. I, 38, *male and female.*—LATH. *Syn.* II. 769, *No.* 35.—From life.*

NATURE in every department of her works seems to delight in variety; and the present subject of our history is almost as singular for its minuteness, beauty, want of song, and manner of feeding, as the Mocking-bird is for unrivalled excellence of notes, and plainness of plumage. Though this interesting and beautiful genus of birds comprehends upwards of seventy species, all of which, with very few exceptions, are natives of America and its adjacent islands, it is yet singular, that the species now before us should be the only one of its tribe that ever visits the territory of the United States.

According to the observations of my friend Mr. Abbott, of Savannah, in Georgia, who has been engaged these thirty years in collecting and drawing subjects of natural history in that part of the country, the Humming-bird makes its first appearance there, from the south, about the twenty-third of March, two weeks earlier than it does in the county of Burke, sixty miles higher up the country towards the interior; and at least five weeks sooner than it reaches this part of Pennsylvania. As it passes on to the northward as far as the interior of Canada, where it is seen in great numbers,† the wonder is excited how so feebly constructed and delicate a little creature can make its way over such extensive regions of lakes and forests, among so many enemies, all its superiors in strength and magnitude. But its very *minuteness*, the rapidity of its flight, which

* The male Humming-bird, figured in the plate, was brought by a friend to the Editor, alive,—but in consequence of confinement became nearly exhausted, and on taking it from the cage, it was seized with paroxysms of fear so great as to become apparently lifeless; it however was restored, and remained the greater part of two days, sitting on a small twig, in the exact posture as drawn, during which time it was fed by means of a camel's hair pencil dipped in dissolved rock candy, until sufficient strength was gained, when it took its final leave by flying out of the window.—[ED.]

† Mr. M'Kenzie speaks of seeing a "beautiful Humming-bird" near the head of the Unjigah or Peace River, in lat. 54°; but has not particularized the species.

almost eludes the eye, and that admirable instinct, reason, or whatever else it may be called, and daring courage which heaven has implanted in its bosom, are its guides and protectors. In these we may also perceive the reason why an all-wise Providence has made this little hero an exception to a rule which prevails almost universally through nature, viz. that the smallest species of a tribe are the most prolific. The Eagle lays one, sometimes two, eggs; the Crow five; the Titmouse seven or eight; the small European Wren fifteen; the Humming-bird *two*, and yet this latter is abundantly more numerous in America than the Wren is in Europe.

About the twenty-fifth of April the Humming-bird usually arrives in Pennsylvania; and about the tenth of May begins to build its nest. This is generally fixed on the upper side of a horizontal branch, not among the twigs, but on the body of the branch itself. Yet I have known instances where it was attached by the side to an old moss-grown trunk; and others where it was fastened on a strong rank stalk, or weed, in the garden; but these cases are rare. In the woods it very often chooses a white oak sapling to build on; and in the orchard, or garden, selects a pear tree for that purpose. The branch is seldom more than ten feet from the ground. The nest is about an inch in diameter, and as much in depth. A very complete one is now lying before me, and the materials of which it is composed are as follow:—The outward coat is formed of small pieces of a species of bluish gray lichen that vegetates on old trees and fences, thickly glued on with the saliva of the bird, giving firmness and consistency to the whole, as well as keeping out moisture. Within this are thick matted layers of the fine wings of certain flying seeds, closely laid together; and, lastly, the downy substance from the great mullein, and from the stalks of the common fern, lines the whole. The base of the nest is continued round the stem of the branch, to which it closely adheres; and, when viewed from below, appears a mere mossy knot or accidental protuberance. The eggs are two, pure white, and of equal thickness at both ends. On a person's approaching their nest, the little proprietors dart around with a humming sound, passing frequently within a few inches of one's head, and should the young be newly hatched, the female will resume her place on the nest even while you stand within a yard or two of the spot. The precise period of incubation I am unable to give; but the young are in the habit, a short time before they leave the nest, of thrusting their bills into the mouths of their parents, and sucking what they have brought them. I never could perceive that they carried them any animal food; though from circumstances that will presently be mentioned, I think it highly probable they do. As I have found their nests with eggs so late as the twelfth of July, I do not doubt but that they frequently, and perhaps usually, raise two brood in the same season.

The Humming-bird is extremely fond of tubular flowers, and I have often stopped, with pleasure, to observe his manœuvres among the blossoms of the trumpet-flower. When arrived before a thicket of these that are full-blown, he poises, or suspends himself on wing, for the space of two or three seconds, so steadily, that his wings become invisible, or only like a mist; and you can plainly distinguish the pupil of his eye looking round with great quickness and circumspection; the glossy golden green of his back, and the fire of his throat, dazzling in the sun, form altogether a most interesting appearance. The position into which the body is usually thrown while in the act of thrusting the slender tubular tongue into the flower, to extract its sweets, is exhibited in the figure on the plate. When it alights, which is frequently, it always prefers the small dead twigs of a tree, or bush, where it dresses and arranges its plumage with great dexterity. The note of the male is a single chirp, not louder than that of a small cricket or grasshopper, generally uttered while passing from flower to flower, or when engaged in fight with his fellows; for when two males meet at the same bush or flower, a battle instantly takes place; and the combatants ascend in the air, chirping, darting and circling around each other, till the eye is no longer able to follow them. The conqueror, however, generally returns to the place, to reap the fruits of his victory. I have seen him attack, and for a few moments tease the King-bird; and have also seen him, in his turn, assaulted by a humble-bee, which he soon put to flight. He is one of those few birds that are universally beloved; and amidst the sweet dewy serenity of a summer's morning, his appearance among the arbours of honeysuckles, and beds of flowers, is truly interesting.

> When morning dawns, and the blest sun again
> Lifts his red glories from the Eastern main,
> Then through our woodbines, wet with glittering dews,
> The flower-fed Humming-bird his round pursues;
> Sips with inserted tube, the honeyed blooms,
> And chirps his gratitude as round he roams;
> While richest roses, though in crimson drest,
> Shrink from the splendour of his gorgeous breast;
> What heav'nly tints in mingling radiance fly!
> Each rapid movement gives a different dye;
> Like scales of burnish'd gold they dazzling show,
> Now sink to shade—now like a furnace glow!

The singularity of this little bird has induced many persons to attempt to raise them from the nest, and accustom them to the cage. Mr. Goffer, of Fairfax county, Virginia, a gentleman who has paid great attention to the

manners and peculiarities of our native birds, told me, that he raised and kept two, for some months, in a cage; supplying them with honey dissolved in water, on which they readily fed. As the sweetness of the liquid frequently brought small flies and gnats about the cage and cup, the birds amused themselves by snapping at them on wing, and swallowing them with eagerness, so that these insects formed no inconsiderable part of their food. Mr. Charles Wilson Peale, proprietor of the Museum, told me, that he had two young Humming-birds which he raised from the nest. They used to fly about the room; and would frequently perch on Mrs. Peale's shoulder to be fed. When the sun shone strongly into the chamber, he has observed them darting after the motes that floated in the light, as Flycatchers would after flies. In the summer of 1803, a nest of young Humming-birds was brought me, that were nearly fit to fly. One of them actually flew out by the window the same evening, and falling against a wall, was killed. The other refused food, and the next morning I could but just perceive that it had life. A lady in the house undertook to be its nurse, placed it in her bosom, and as it began to revive, dissolved a little sugar in her mouth, into which she thrust its bill, and it sucked with great avidity. In this manner it was brought up until fit for the cage. I kept it upwards of three months, supplied it with loaf sugar dissolved in water, which it preferred to honey and water, gave it fresh flowers every morning sprinkled with the liquid, and surrounded the space in which I kept it with gauze, that it might not injure itself. It appeared gay, active, and full of spirit, hovering from flower to flower as if in its native wilds, and always expressed by its motions and chirping, great pleasure at seeing fresh flowers introduced to its cage. Numbers of people visited it from motives of curiosity, and I took every precaution to preserve it, if possible, through the winter. Unfortunately, however, by some means it got at large, and flying about the room, so injured itself that it soon after died.

This little bird is extremely susceptible of cold, and if long deprived of the animating influence of the sunbeams, droops and soon dies. A very beautiful male was brought me this season, which I put into a wire cage, and placed in a retired, shaded part of the room. After fluttering about for some time, the weather being uncommonly cool, it clung by the wires, and hung in a seemingly torpid state for a whole forenoon. No motion whatever of the lungs could be perceived, on the closest inspection, though at other times this is remarkably observable; the eyes were shut; and when touched by the finger it gave no signs of life or motion. I carried it out to the open air, and placed it directly in the rays of the sun, in a sheltered situation. In a few seconds respiration became very apparent, the bird breathed faster and faster, opened its eyes, and began to look about, with as much seeming vivacity as ever. After it had completely recovered, I restored it to liberty; and it flew off to the withered top of a pear tree, where it sat for some time dressing its disordered plumage, and then shot off like a meteor.

The flight of the Humming-bird from flower to flower, greatly resembles that of a bee, but is so much more rapid, that the latter appears a mere loiterer to him. He poises himself on wing, while he thrusts his long slender tubular tongue into the flowers in search of food. He sometimes enters a room by the window, examines the bouquets of flowers, and passes out by the opposite door or window. He has been known to take refuge in a hot-house during the cool nights of autumn; to go regularly out in the morning, and return as regularly in the evening, for several days together.

The Humming-bird has, hitherto, been supposed to subsist altogether on the honey, or liquid sweets, which it extracts from flowers. One or two curious observers have indeed remarked, that they have found evident fragments of insects in the stomach of this species; but these have been generally believed to have been taken in by accident. The few opportunities which Europeans have to determine this point by observations made on the living bird, or by dissection of the newly-killed one, have rendered this mistaken opinion almost general in Europe. For myself, I can speak decisively on this subject. I have seen the Humming-bird for half an hour at a time darting at those little groups of insects that dance in the air in a fine summer evening, retiring to an adjoining twig to rest, and renewing the attack with a dexterity that sets all other Flycatchers at defiance. I have opened from time to time great numbers of these birds; have examined the contents of the stomach with suitable glasses, and in three cases out of four, have found these to consist of broken fragments of insects. In many subjects entire insects of the coleopterous class, but very small, were found unbroken. The observations of Mr. Coffer as detailed above, and the remarks of my worthy friend, Mr. Peale, are corroborative of these facts. It is well known that the Humming-bird is particularly fond of tubular flowers where numerous small insects of this kind resort to feed on the farina, &c. and there is every reason for believing that he is as often in search of these insects as of honey; and that the former compose at least as great a portion of his usual sustenance as the latter. If this food be so necessary for the parents, there is no doubt but the young also occasionally partake of it.

To enumerate all the flowers of which this little bird is

fond, would be to repeat the names of half our American Flora. From the blossoms of the towering poplar, or tulip tree, through a thousand intermediate flowers, to those of the humble larkspur, he ranges at will, and almost incessantly. Every period of the season produces a fresh multitude of new favourites. Towards the month of September there is a yellow flower which grows in great luxuriance along the sides of creeks and rivers, and in low moist situations: it grows to the height of two or three feet, and the flower which is about the size of a thimble, hangs in the shape of a cap of liberty, above a luxuriant growth of green leaves. It is the *Balsamina noli me tangere* of botanists, and is the greatest favourite with the Humming-bird of all our other flowers. In some places where these plants abound, you may see at one time ten or twelve Humming-birds darting about, and fighting with and pursuing each other. About the twentieth of September they generally retire to the south. I have, indeed, sometimes seen a solitary individual on the twenty-eighth and thirtieth of that month, and sometimes even in October; but these cases are rare. About the beginning of November, they pass the southern boundary of the United States into Florida.

The Humming-bird is three inches and a half in length, and four and a quarter in extent; the whole back, upper part of the neck, sides under the wings, tail coverts, and two middle feathers of the tail, are of a rich golden green; the tail is forked, and, as well as the wings, of a deep brownish purple; the bill and eyes are black; the legs and feet, both of which are extremely small, are also black; the bill is straight, very slender, a little inflated at the tip, and very incompetent to the exploit of penetrating the tough sinewy side of a crow, and precipitating it from the clouds to the earth, as Charlevoix would persuade his readers to believe. The nostrils are two small oblong slits, situated at the base of the upper mandible, scarcely perceivable when the bird is dead, though very distinguishable and prominent when living; the sides of the belly and belly itself, dusky white, mixed with green; but what constitutes the chief ornament of this little bird, is the splendour of the feathers of his throat, which, when placed in a proper position, glow with all the brilliancy of the ruby. These feathers are of singular strength and texture, lying close together like scales, and vary when moved before the eye from a deep black to a fiery crimson and burning orange. The female is destitute of this ornament; but differs little in other appearances from the male; her tail is tipt with white, and the whole lower parts are of the same tint. The young birds of the first season, both male and female, have the tail tipt with white, and the whole lower parts nearly white; in the month of September the ornamental feathers on the throat of the young males begin to appear.

On dissection the heart was found to be remarkably large, nearly as big as the cranium, and the stomach, though distended with food, uncommonly small, not exceeding the globe of the eye, and scarcely more than one-sixth part as large as the heart; the fibres of the last were also exceedingly strong. The brain was in large quantity, and very thin; the tongue, from the tip to an extent equal with the length of the bill, was perforated, forming two closely attached parallel and cylindrical tubes; the other extremities of the tongue corresponded exactly to those of the Woodpecker, passing up the hind head and reaching to the base of the upper mandible. These observations were verified in five different subjects, all of whose stomachs contained fragments of insects, and some of them whole ones.—Wilson.

ANGLING IN SURINAM.

The negroes of Surinam take their fish by implements which may be denominated the *spring hook* and the *spring basket;* the first of which consists of a strong elastic rod or pole stuck in the ground under water, and to the other end of which are attached two lines of unequal lengths, the shorter having fastened to it a small stick ten inches long, and the other the same, but fixed lower; while at the extremity of this line is hooked a small fish, by the fins, in such a manner, however, as to be able to swim to and fro, and serve as a bait for the larger species. Two long sticks being next placed in the ground, so as to appear above water, a third stick is laid across, forming them into the appearance of a gallows; above this gallows is bent and fixed the elastic rod or pole, by means of the double line and the sticks fixed thereon, as mentioned above, but in such a manner that, at the least pull at the bait, the apparatus gives way, the elastic rod instantly assumes an upright position, and the fish that occasioned the spring, by taking the bait, is immediately suspended above water. The spring-basket is upon a similar construction. The basket is made of warimbo-reeds in the form of a sugar-loaf, in the small end of which the elastic rod is fastened, while at the other end is an open trap-door, the whole being supported in a proper position by a forked stick. No sooner has a large fish entered the basket and taken the bait, than the elastic rod, as in the former instance, erects itself with a spring, the trap-door closes, and the game is thus secured. In this mode of angling there is,

of course, no occasion to watch the line as in the common method, when it frequently happens that the philosophic fisher displays no ordinary degree of patience in calmly waiting for hours, or perhaps for days, in expectation of a very fine nibble at least, if not of a fierce bite. The spring-hook, or spring-basket, if set at night, may be conveniently examined the next morning, and will seldom be found empty, unless fish be very scarce.—*Annals of Sporting.*

From the New-England Galaxy.

SOME PASSAGES FROM THE DIARY OF A SPORTSMAN.

[Continued from page 90.]

The Sportsman is led by the very nature of his pursuits to pass away many solitary hours, with no other companionship than the communion of his own thoughts. In his utter solitude he indulges in many a dreamy and delicious reverie, in many a bright imagining. As he paces the far extended plain, or reclines at noonday at the root of the patriarchal tree of the forest, his thoughts wander forth into the unexplored realms of the future, or steal back into the shadowy halls of the great Past, and make their melancholy sojourn with the glorious dead. The past, the past! it is ever with a deep sense of awe that we venture into the broad mysterious dominions of the past. The mind is impressed with a strange tinge of sadness as it wanders among the ashes of long-forgotten generations; as it calls those mighty spirits of the dead again into ideal life, as it meets with the good, the brave, the pious, the learned, the benevolent men of other days.

It is natural, as it is delightful, for the solitary Sportsman, as he plunges into the depths of our immense woods, as he loiters along the lonely shore, as he glides across the silent bay in his rocking skiff, as he muses upon the border of the rivulet, to recur to those not far-distant days, when the barbaric tribes of the red men peopled the land around him. The spirit of the departed savage is around, and about him; it haunts the wood and peoples the valley. As he urges his slender shallop over the billows, he almost fancies that he can again discover the gliding boat of the Indian; as he traverses the solemn glades of the forest he almost expects to see the apparition of the savage warrior start from the leafy thicket,

> And then to mark the Lord of all,
> The forest hero, trained to wars,
> Quivered and plumed, and lithe and tall,
> And seamed with glorious scars,
> Walk forth, amid his reign, to dare
> The wolf, and grapple with the bear.

But yesterday, as it were, the calumet of peace was lit, the council fire sent up its flames in the silence of the deep woods, or the war-hatchet was dug from the root of the peaceful tree, and the great war-dance made the hills resound with the measured tramp of a thousand warriors, and the hideous yell sent forth from a thousand warlike bosoms. But yesterday, as it were, and the now cultivated hill was overshadowed by the wide and drooping wood, and the plain whose fertile glebe is now made fruitful by the hand of the husbandman, or occupied by the secluded village, or the vast and noisy city, was a silent and interminable wilderness, whose tranquillity was only disturbed by the shout of the Indian hunter, or the blast of the Indian horn. From the recesses of every wood the hearth of the Indian lodge sent up its curling smoke; on the green slopes around, the sounds of childish sport were heard; beneath the sacred tree the bones of the old forefathers of the hamlet were committed to their long repose. The Sportsman is continually reminded of their existence, by a thousand objects around him. With every venerable tree, thick with the moss of age, with every wild stream that lifts up its clamorous voice in the solitude, are mysteriously connected associations which call before his memory the glories of other days, the ferocity of the savage warrior, or the freedom of the wild hunter. He often meets with relics of that departed race in his solitary rambles; he discovers the lonely cairn where the ashes of the distinguished chieftain repose; he meets with the pious heap of stones which savage affection has erected over the bones of a beloved object; he oftentimes finds the relics of the crumbling lodge or decayed canoe, the huge wooden bowl, the rude pottery, the stone-hatchet, the clumsy knife, the flint-pointed arrow, the shell-covered shield, the ornamented pouch or moccasin, the bow or battle-axe of tough wood or polished bone, and various other curiosities which serve to remind of that untutored people whose hands so long ago fashioned them.

If the Sportsman is wearied at any time with a long and patient march, then what more delightful than to fling himself down upon the smooth sea-beach or the yielding carpet with which boon Nature has overspread the earth, and indulge in repose mental or bodily. He can then produce his well-filled scrip, and like the Greeks of old after the battle, "snatch a short repast." With what charitable satisfaction does he bestow a bountiful portion of his stores

upon poor Carlo, whose watery jaws, wagging tail, and swimming and wide-open eyes, so imploringly beseech him for a benefaction! Then is the joy-bestowing flask produced, and the fragrant and delicious cigar ignited. Then also he can produce from a secret nook in his game-bag, his miniature edition of his favourite poet, and surrender up his imagination to the enchantment of inspired song. Or if the spirit so moveth him, he can sharpen his pencil and display his parchment, and inscribe in poetical verse, the beauty of the rare scenery around him. Upon a flower-enamelled bank, at the borders of a beautiful stream, whose waters rivalled in purity and clearness the very atmosphere itself, and whose voice poured out a melodious murmur, richer than the sound of the flute, or the modulation of the Eolian harp itself, the following verses were composed

TO A RIVULET.

Merry brook!
Upon thy margin green, how dear the joy!
When I did loiter here;—a truant boy!
With line and hook!

Thou singest still,
That same light-hearted song thou then didst sing
When life to me had not a jarring string
Nor painful ill!

Thy silent strand,
Seemed then profusely paved with yellow gold:
That gold is now but poor and worthless mould,
—But shining sand!

I wondered then
Why human life was ever like the sea,
Vexed by the frantic noise eternally,
Of angry men!

It seemed to me—
'Twere better if the course of human life
Moved like thy current without noise or strife.
On to the sea!

Babbling stream,
Full many a pleasant thought of early days
Is wedded unto thy bewildering maze,
And cheerful gleam.

Favourite brook,
I love even now to pace thy grassy brink!
Upon the innocent sports of youth to think,
And on thee look.

Your angler is apt to be a more meditative and poetical personage than the gunner. He sits by the passing stream, by the hour together, or glides about from eddy to eddy (if trouting) with the coolness and silence of a philosopher. His eye is limited to the peaceful wave; it is never suffered to wander into the air in pursuit of the passing wing, nor is his footstep led away from hill to hill, by the hovering flock or the nimbly-moving animal. He poises the silent and inoffensive rod in his hand, and has little affection for the murderous gun. In comparison with the war-like gunner, he practices the gentle trade and craft of peaceful and civil life. Here are some verses written during a too-bright afternoon in the summer time, when not a fin would wrinkle the surface of the water, nor a gill venture within hail of our seductive hook. At such times it is usual for the fishing line to give place to the line poetical. If the verse is of a drowsy and narcotic nature it is but fair to impute the blame to the universal slumber of the woods and wilds around, which infuse something of their nodding qualities into the bosom of the bard.

THE ANGLER'S SONG.

When first the flame of day,
Crimsons the fleeting mist,
And from the valley rolls away
The haze, by the sunbeam kissed,
Then to the lonely woods I pass,
With angling rod and line;
While yet the dew-drops in the grass,
Like scattered diamonds shine.

How vast the mossy forest-halls;
Silent and full of gloom!
Thro' the arch'd roof the day-beam falls
Like torch-light in a tomb.
The old trunks of trees rise around,
Like pillars in a church of old,
And the wind fills them with a sound
As if a bell were tolled.

Where falls the noisy stream
In many a bubble bright,
Along whose grassy margin gleam
Flowers gaudy to the sight,
There silently I stand,
Watching my angle play;
And eagerly draw to the land,
My speckled prey.

Oft ere the carrion bird has left
His eyry the dead tree!
Or ere the eagle's wing has cleft
The cloud in heaven's blue sea,—
Or ere the lark's bold pinion speeds
To greet the misty day,
My foot has shaken the bending reeds;
My rod has found its prey.

And when the twilight with a blush
Upon her cheek, moves by,
And evening's universal hush
Spreads o'er the darkening sky,
And flickeringly the tapers burn
In villages far away,
Then from the lonely stream I turn
And from the forests gray.

It is not easy to determine whether there is more real pleasure to be derived from the angle or the gun. Some persons are captivated by the stirring excitement of the one, for whom all the quiet and unobtrusive fascination of the other has no charm. But perhaps in most cases it is true that the hand which is familiar with the gun can wield a skilful rod. The same person who will patiently, (nay joyfully) sustain the fatigue of the chase, in the woods or on the sea-shore, with a heavy gun across his arm, will also take delight in following the route of the running stream, although he has to wade "up to his knees in water." In both occupations he receives equal and exquisite pleasure; his mind is amused, his bodily strength is increased, his slumber is profound and refreshing, he rises with a liberal and merry heart, and the depressing cares and anxieties that prey upon most slothful minds and bodies, never venture to invade him. He is social and happy, and passes through the world like one who is contented to enjoy it as it is, without indulging in vain and wicked repinings, because it is no better.

That picture of the angler! suspended over the door of our good friend Bradley, how often has it enticed me into the purchase of that fishing and shooting gear so dear to a Sportsman's heart, so ineffably dear to his purse. I never pass that tempting bait without casting a longing and wistful glance at the various implements and appliances of fishing craft and shooting craft displayed at the window with such a prodigal and judicious care, and I long to possess them all, and hasten away with them "to the mountain's brow," or the forest's heart, or the ocean's border. Behold, the golden profusion! the priceless wealth! exceeding in value the Indian pearl, or barbaric gold. Here are rows of polished hooks, comprehending all shapes and sizes, from that which will conquer the biggest fin that cleaves the waters around Nahant or Nantasket, to that which is suited to the gills of the smallest minnow that sparkles in the pool. Here is an angling creel of snow white twigs, woven perhaps by still whiter hands; here the firm net-work of the game-bag: the *water-proof* drinking flask—the copper powder flask—the transparent horn—the double shot-belt —the landing net—the gut, hair, grass, and silk lines, buoys of all colours, jointed rods tapering into an almost invisible point, trolling winches, and an endless variety of gimp, tackle, and artificial flies, of most captivating brilliancy.

There has been much controversy among our brother anglers, in regard to the best bait for taking both brook and salmon trout. We have often tried the artificial fly, but without any extraordinary success. In fact, unless you are fortunate enough to select the fly of the proper colour and species, you will fail in all your attempts. After many unsuccessful experiments, we have been obliged to resort to the old-fashioned worm bait. In autumn, when clouds of grasshoppers swarm in the meadows, one of that long-legged gentry proves to be a very killing bait. The white or green worm, however, (the red has not sufficient tenacity,) if skilfully attached to the hook, may be relied on as not inferior to all others. It is best to thrust two of them upon the hook, taking care to leave bare its tip. One end of each worm should be suffered to hang loosely from the hook, that by its motion it may have the appearance of life. If you do not suffer the fish to gorge this bait, it will serve you on many trials. It requires long and careful practice, to enable an angler to cast his line with skill and precision. "The common practice is to go to the head of the stream or the pool, and to allow the bait to make its way before you, downwards, till it be caught by some watchful eye, and lodged in some unhappy jaw. But in this case you always pull against the stream, and consequently you more than double the resistance; besides, as all fish catch any bait floating downwards with their heads turned against the current, it is ten to one but after your bait has been almost as far home in the stomach of the trout, as Jonah was in that of the whale, the trout may open his mouth, and allow *you* to free him of so inconvenient a meal. Now, instead of fishing with the bait *down* a small mountain stream, fish *up* it; keep a pretty long line, and continue constantly pulling it out and throwing it in; thus, even suppose there is not a single fish in the stream or in the pool which may have the least intention to swallow, many will have a great inclination to look at, to nibble at, and tamper with this danger. During all this floating and circling, during all this nibbling and dallying, you will observe that the trout still keep, in this mode of fishing, betwixt your hook and you; and, accordingly, whenever you choose to call home your hook with a sudden jerk, you have a great chance to come round some fellow's jaws, or across his breast, who had no intention to swallow. You must however remember, while practising this method, to have a strong line and rod, which will bend down almost to your hand, for, in order to accomplish your purpose you are compelled to draw so powerfully that should you hit upon a root or stone your tackle will be in danger of giving way. It is very difficult to pro-

cure in this city a rod thoroughly seasoned, well balanced, and made of proper materials. The India joint rods which are so common, cannot be depended upon. They should be made of hard, solid wood, tipped with whalebone, of great elasticity and strength. It will be found to be very convenient to attach a short, stout spear-point to the ferrule of the rod, which can be thrust into the turf, from time to time. Indeed, many of the best imported rods are provided with this useful instrument. There is no better sport than that of taking the large salmon trout. It requires no little generalship to capture this wary rover. It will require all your science as a tactician, in the cautious advance, in the guarded retreat, to outmanœuvre him. If you press him too hotly, he will inevitably escape from you, bearing away with him in triumph, your whole length of line, hooks and all, as his *opima spolia*, the evidences to his comrades, of his strength and cunning, and of your defeat. A man never looks more like that person which Dr. Johnson maliciously describes an angler to be, than when standing upon a brook side with a rod in his hand, whose *line*, a veteran trout has borne away to his cell some fifteen feet under the bank. The salmon trout abounds in our large lakes and ponds, and is often taken in streams. The following lines by James Hogg, one of the sweetest of British poets, I will venture, in consideration of their beauty, to insert.

Thou bonny fish from the far sea,
Whose waves unwearied roll
In primitive immensity,
Aye buffeting the pole!
From millions of thy silvery kind
In that wide waste that dwell,
Thou only power and path did'st find,
To reach this lonely dell.

And now my beauty! bold and well
Thy pilgrim-course has been,
For thou like Wordsworth's Peter Bell,
Hast gazed on Aberdeen!
And all those sweetest banks between,
By Invercauld's broad tree,
The world of beauty hast thou seen
That sleeps upon the Dee.

There oft in silence clear and bright
Thou layest, a shadow still,
In some green nook where with delight
Joins in the mountain-rill,
There in the waters scarce-heard boom,
Didst thou float, and rise, and sink,
While o'er the breathing banks of broom,
The wild-deer came to drink.

Vain sparry grot and verdant cave
The stranger to detain—
For thou wast wearied of the wave,
And loud voice of the main;
And nought thy heart could satisfy,
But those clear gravelly rills,
Where once a young and happy fry,
Thou danced among the hills!

The river roaring down the rock,
The fierce and foaming linn,
Essayed to stay thee with the shock,
The dark and dizzy din—
With wilier malice nets did twist
To perfect thy undoing,
But all those dangers hast thou missed,
True to thy destined ruin!

The poetical angler meant, I suppose, to insinuate by "True to thy destined ruin," that after listening year after year to "The loud voice of the main," lying like a shadow in security by "Invercauld's broad tree," the noble subject of his poem was predestined to die by his hand. Indeed to perish by his hand, would be (in the savage language of Metamora,) to "die gloriously." Indeed if he were but half as skilful in casting as in composing lines, no fin could resist or escape him.

PROGNOSTICS OF THE WEATHER.

The success of the Chase and Shooting must always depend on the weather; and therefore the following prognostics will be interesting to the Sportsman:—

Clouds.—When there are two different currents of clouds, especially if the lowest flies fast before the wind, and these appear in hot weather, in the summer, they portend the gathering of a thunder-storm.

When thin whitish clouds fly swiftly in the air under those that are thicker, and when small scattered ones appear in clear weather, *rain*.

When a general cloudiness covers the sky above, with small black fragments of clouds, like smoke, driving underneath, *rain* is not far off, and will probably be lasting.

If a black cloud is seen in the west about sun-setting, and when, at any time, such clouds arise suddenly in that quarter, *rain*.

When clouds are formed like fleeces, dense toward the centre, and very white at the extremities, with a bright and blue sky about them, they are of a frosty coldness, and will soon fall, either in *snow*, *hail*, or hasty showers of *rain*.

Against heavy rain, every cloud rises larger than the former, and all of them appear in an increasing state;—this is perhaps most remarkable on the approach of a thunder-storm; after the vapours have been copiously elevated, suspended in the sky by the heat, and are highly charged with the electrical fluid, small pieces of flying clouds augment and assemble together, until, in a short time, they cover the sky: as this collecting of the clouds out of the air, is a certain forerunner of rain, so when they decay and resolve themselves into air, it is a sure symptom of fair weather.

When clouds are streaming within the canopy, and small ones enlarge themselves; when they are large, and shaped like rocks or towers; when waterish clouds are on the tops of mountains, and small, rugged, livid ones near the sun, especially at its setting, they all prognosticate rain. Clouds, with white summits and livid bases, foretel thunder; and two such clouds rising on either hand, sudden tempests.

If clouds are seen to breed high in the air, in thin white trains, like locks of wool, they denote that the vapour, as collected, is irregularly spread by contrary winds above; and the consequence will soon be a wind below, and probably rain with it.

Small and white clouds, high and light, and when mountains are free from clouds, high and light, are both symptoms of fine weather.

Wind.—Whirlwind, settled fair. Continuing in the north-east three days without rain, *fair* for eight or nine days; going backward, *rain;* when it veers hastily about to several points of the compass, rain quickly follows. When the wind makes a whistling or howling noise, it is as sure a prognostic of rain as the wind can afford. A *brisk* south wind, dry. Wind may be expected from that quarter or the opposite, if the clouds, as they come forward, seem to diverge from a point in the horizon. Wind from north-east to north-west, fair; from south-east to south-west, rainy. A week's fair weather, with a southerly wind, drought; an easterly wind the fore part of summer, dry summer; westerly the latter part of summer, dry autumn.

Dew.—A heavy dew, fair. If it vanishes suddenly or early, rain. When the dew lies plentifully upon the grass after a fine day, another fine one may be expected to succeed it; but if, after such a day, no dew is upon the ground, and no wind stirring, it is a sign that the vapours ascend, where they will accumulate, and must terminate in rain.

Vapours.—A misty morning, and the mist falls, a hot day; if the mist rises, rain. If general before sun-rise, near the full of the moon, fine weather.

Where there are high hills, and the mist which hangs over the lower lands in a morning draws towards the hills, and rolls up their sides until it covers their tops, there will be no rain.

To judge correctly of the appearance of a fog, it is necessary to be acquainted with the nature of the country, as, in some places, if the mist hangs upon the hills and drags along the woods, instead of overspreading the level ground in a morning, it will turn to rain. The contrary, when it comes down from the hills, and settles in the vallies.

There is commonly either a strong dew or a mist over the ground between a red eve and a gray morn; but if a red morning succeeds, there is no dew.

If a white mist in an evening or night is spread over a meadow through which a river passes, it will be drawn up by the next morning's sun, and the day afterwards will be bright.

When a rainbow appears in the morning, rain; in the evening, fine. The frustrum of a rainbow, rain; predominantly red, wind; green or blue, rain; appearing in boisterous weather in the north, fine.

Lightning without thunder, after a clear day, is a sign of the continuance of fair weather.

Sky.—When those vapours which the heat of the day exhales from the earth are precipitated by the cold night, then the sky is clear in the morning; but if they still remain in the air, rain may be expected.

A dark thick sky, lasting for some time, without either sun or rain, changes to a fair clear sky before it turns to rain.

When a lowering redness spreads far upwards from the horizon, either in the morning or evening, it is succeeded either by rain or wind, frequently by both; and when a fiery redness, with rugged clouds, extends towards the zenith in an evening, a high wind from the west or south-west, attended with rain, follows; when the sky is tinged with a sea-green colour near the horizon, when it ought to be blue, rain will continue and increase; when of a dead blue, it is abundantly loaded with vapours, and will be showery.

When the canopy is high, fair; low, rainy; orange coloured in the morning, rain; deep blue ground, fair; pale blue, rainy.

One observation is general, we believe,—"the evening red, the morning gray, are sure signs of a fair day;" and it is founded upon this circumstance, that if the abundance of vapours denoted by the red evening sky descends in dew, or is otherwise so equally dispersed in the air, that the morning shall appear gray, a fine day may be expected from that equal state of the atmosphere.

If in a morning some parts of the sky appear green, between the clouds, while the sky is blue above, stormy weather is quickly approaching.

Sun.—Rising orangy, rain; rising red and fiery, wind and rain; cloudy, and the clouds decrease, certain fair weather; rising dimly, drizzly. If the sun's rays breaking through the clouds are visible in the air, it is a proof that the air is sensibly filled with vapours, which reflect the rays to the sight, and these vapours will soon produce rain. When there is a haziness aloft in the air, so that the sun's light fades by degrees, and his orb looks whitish and ill defined, it is one of the most certain signs of rain.

Sun setting foul, rain; red, wind or rain; blue, rain; dusky, streaked with red, storm; purple, fine; bright, fine; when the sun appears white at setting, or goes down into a dusky bank of clouds, it portends the approach and continuance of bad weather.

Moon and Stars.—When the moon and stars grow dim in the night with a haziness in the air, and a ring or circle appears round the moon, rain is at hand.

If the moon looks red, it is a sign of wind; if pale and dim, of rain; if white, and of her natural colour, with the sky clear, of fair weather.

Should the moon be rainy throughout her course, it will clear up at the ensuing change, and rain will probably fall in a few days after, and continue; if, on the contrary, the moon has been fair, and at the change it rains, fine weather will, in all likelihood, be restored about the fourth or fifth day of the moon, and be of some duration. When the moon is bright with sharp tips, fair; new moon not appearing till the fourth day, rainy month; the lower horn of the new moon sullied, foul weather before the full; the middle, storms about the full; the upper horn, foul about the wane. Saturday's moon, rainy month.

Atmosphere.—Cold after rain, rain; cold in summer, rain; warm in winter, rain; sultry in summer, thunder; heavy, fair; light, rain; moist, rain; dry, fair.

Rain.—Sudden rain seldom lasts long; coming on gradually, and when the air grows thick by degrees, and the sun, moon, or stars, shine more and more dim, it is likely to continue six hours. Beginning with a high southerly wind, and the wind subsides, rain for twelve hours or more, and sometimes continues until a strong north wind clears the air; beginning before sun-rise, will end before noon: a shower before sun-rise, a fine day usually succeeds; beginning an hour or two after sun-rise, a rainy day; setting in wet between eleven and twelve o'clock, a rainy afternoon; clearing up about that time, the afternoon fine; cold wind after rain, more rain; a squall, or rain, or hail, settled fair; a rainy Friday, the same weather on Sunday; and a wet Sabbath is frequently followed by a daggly week.

Sounds, such as bells, noise of waters, beasts, birds, heard distinctly from a great distance, portend rain. If the earth, or any fenny places, yield any extraordinary scents, or any disagreeable smells arise from drains, rain. A white frost, rain within three days; the more than usual sinking of rivers, presages rain. The speedy drying of the surface of the earth denotes a northerly wind and fair weather; and its becoming moist, southerly wind and rain, for the air sucks up all the moisture on the surface, even though the sky be overcast, and that is a sure sign of fine weather; but if the earth continue damp, and water stand in shallow places, no trust should be put in the clearest sky; for, in this case, it is deceitful.

Animals.—If cattle or sheep feed greedily and faster than ordinary when it rains, it is a sign of the rain's continuance; and when sheep skip and play wantonly, rain is at no great distance. If the sheep wind up the hills in the morning to their pasture, and feed near the tops, the weather, although cloudy and drizzling, will clear away by degrees, and terminate in a fine day; but if they feed in the bottoms, the rain will continue and increase. Geese and ducks more noisy, and washing and diving more than usual, rain; cock crowing in the middle of the day, and peacock squalling much, rain; hawks hovering high in the air, fine weather; owls screaming frequently in the evening when foul, fair and frosty.

Swallows skimming the surface of waters, rain; so long as they keep aloft after their prey, the sky is serene; but when they descend and flit along the surface of the earth or water, rain is not far off. A drought of three months' duration broke up at the summer solstice in 1775: the day previous to the rain falling, the swallows flew very near the ground, which they had never done during the whole period of the dry weather. Sparrows chirping much in a fine morning, rain.

Dogs are said by some to be particularly sleepy, and to eat grass, before rain; but grass is a salutary vomit which nature prompts them to take at all times, when their stomachs require such an evacuation; of course it is not an unerring proof that the approach of rain alone drives them to seek this remedy. Moles throwing up more earth than usual, and its being small and dry, and their appearance sometimes above ground, rain. Worms creeping in numbers out of the ground, rain: and from the same principle, that they as well as moles, are sensible of the access of something new in the atmosphere, and to the surface of the earth. Frogs appearing of a golden hue, fine; dusky colour, rain: and toads, in an evening, crawling over the road or beaten path, where they are seldom seen, but

when restless from the expectation of approaching rain. Fishes are supposed to be affected, since they cease to bite freely, when rain is depending. All sorts of insects are more stirring than ordinary against rain. Bees are in fullest employ, but, if likely to rain, confine their industry to where they can reach their hives before the storm comes on; when they fly far abroad, and stay out late, fine. When the common flesh flies are more bold and greedy, rain; when small flies flock together in great numbers, about the beams of the sun, a little before it sets, fine. Ants bustle more than usual, move their eggs to dry places, and then retire to their burrows before rain falls. Gnats playing in the open air, heat; when they form a vortex in the shape of a column, it announces fine weather; when they collect and dance in the shade, showers; and when they sting much, cold and rain. Spiders crawling abroad, rain. Bats flying more numerously and more early in the evening, fine.

Chronic pains being more violent than usual, rain in summer, frost in winter. A disagreeable languor is generally felt before thunder.

A serene autumn denotes a windy winter; a windy winter, a rainy spring; a rainy spring, a fine summer; a fine summer, a windy autumn: but it is very rarely that the seasons succeed each other in the same manner for two years together. It has been remarked, that, if at the beginning of the winter, the south wind blow, and then the north, it portends cold; but should the north wind first blow, the winter will be mild. A hot and dry September, a cold spring; summer moist and cool, a hard winter: if walls that used to be damp are peculiarly dry at the commencement of winter, a hard winter may be predicted, for it shows a dry air, which, in winter, is always joined with frost.

Animals are affected by rain, wind, &c. and in a variety of instances afford notice of their approach.

The leech, kept in a common eight ounce phial, three-fourths filled with water, (changed once a week in summer, and twice in winter,) and covered with a bit of linen rag, is a sure prognosticator of the alterations in the weather. The following are its indications:—In serene weather, it lies rolled up at the bottom in a spiral form. When it is about to rain in the forenoon, it creeps to the top and remains there, till the weather is settled. Previous to wind, it keeps in rapid motion, and seldom rests, till it begins to blow hard. If a remarkable storm of thunder and rain is to succeed, it lodges some days before continually without the water, and is very uneasy and convulsed. In frost, as well as in clear weather, it lies at the bottom; and in snow or rain, it keeps at the mouth of the phial.

In the account of animal barometers, this anecdote is remarkable. A gentleman, some few years since, brought a pointer dog, from South Carolina, who was a prognosticator of bad weather. "Whenever I observed him, (says his master,) prick up his ears in a listening posture, scratching the deck, and rearing himself up, to look over to the windward, where he would eagerly snuff up the wind, though it was the finest weather imaginable, I was sure of a succeeding tempest; and this animal was grown so useful to us, that whenever we perceived the fit upon him, we immediately reefed our sails, and took in our spare canvas, to prepare for the worst."

It is a sign of rain, when the soot collected round pots or kettles, takes fire, in the form of small points, like grains of millet, because this phenomenon denotes, that the air is cold and moist.

The moon is supposed to have influence on the weather. The following table ascribed to the illustrious astronomer, Dr. Herschell, is constructed upon a philosophical consideration of the attraction of the sun and moon in their several positions, respecting the earth; confirmed by the experience of many years' actual observations, and will, without trouble, and with great truth suggest to the observer, what kind of weather will follow the moon's entrance into any of her quarters.

NEW OR FULL MOON.	SUMMER.	WINTER.
If it be *new* or *full* moon, or the moon enters into the *first* or *last* quarters at the hour of 12	Very rainy	Snow and rain.
Or between the hours of		
2 and 4	Changeable	Fair and mild.
4 .. 6	Fair	Fair.
6 .. 8	Fair, if wind N. W.	Fair and frosty, if N. or N. E.
	Rainy, if S. or S. W.	Rainy, if S. or S. W.
8 .. 10	Dry	Dry.
10 .. Midnight	Fair	Fair and frosty.
Midnight .. 2	Ditto	Hard frost, unless wind S. or S. W.
2 .. 4	Cold with frequent showers	Snow and Stormy.
4 .. 6	Rain	Rain.
6 .. 8	Wind and rain	Stormy.
8 .. 10	Changeable	Cold, rain, if W., snow if E.
10 .. Noon	Frequent showers	Cold, with high wind.

In extracting these remarks, it may not be amiss to observe, that every season has its peculiar characteristic, and it is asserted by an intelligent observer, that the same augury which in a fair season foretels fair, will, in a rainy one, presage wet weather; therefore the characteristic of the season ought to be pointed out before the quality of the weather can be prognosticated.

AN EXCURSION TO LAKE GEORGE.

It was a beautiful morning in the month of August, that I set out from Saratoga, in company with a pleasant little party, on a visit to Lake George. Few who have read or travelled in any degree, are ignorant how much classic ground lies between the two places,—and our interest and attention were kept much occupied by various objects along the road, until we reached Glenn's Falls. This is decidedly one of the wildest and most romantic cascades we have ever beheld. The water is broken up and thrown about from rock to rock in the most picturesque and fanciful manner. Cooper has given a very lively and faithful description of this beautiful fall, in his "Last of the Mohicans." I had the volume with me, and read his portraiture as I stood on the bridge near the cascade, and had of course an excellent opportunity of judging of the truth and justice of the picture. After dining at this place, we resumed our road, and reached Lake George, about the middle of the afternoon. It is truly one of the most enchanting scenes in the whole country,—presenting a beautiful sheet of pure water, surrounded by mountains, which are clothed in the richest livery of nature. If a man has the least "music in his soul," such a spot as this is enough to awaken in him at least the feeling, if not the actual perpetration of poetry. I pity the being who can look upon such a scene unmoved or ungratified.

Towards evening we procured a boat, and set out, ladies and all, on a fishing excursion. Nothing, perhaps, can be clearer than its waters of this charming lake;—as you glide gently over its surface, you can distinctly perceive the bottom, at the distance of many feet, and may observe the active tenants of the limpid element pursuing their rapid and not ungraceful gambols around and beneath your boat. We had pretty good sport,—and although none of us professed anglers, hauled in the perch in considerable numbers. It was not a little amusing to observe the animated zeal with which the ladies entered into the occupation, and to notice the great eagerness they manifested for success, and the alarm which its attainment occasioned them. We found it very necessary, when any one of them was so fortunate as to secure an unwary straggler, to be on the watch,—for as soon as their rods were sufficiently elevated to raise their prey out of the water, the little dangler came flying about among our heads, threatening us with no very agreeable salute, until some gentleman of the company had secured him, and delivered him over to the fair captor, who was generally too much afraid of her prize to take him into actual possession. After two or three hours employed in fishing, and rowing about the lake, we returned to a comfortable supper at the hotel, and in the evening were entertained with an exhibition of the wonderful echo at this place. On the firing of a gun, the sound reverberated for a considerable distance along the opposite shore, then seemed to return, and finally appeared to run back into the woods immediately across.

In the morning, with the exception of the ladies, we betook ourselves again to the lake, with our boat and our rods,—but unaccompanied by the success of the preceding evening. The perch and the trout kept warily out of the way, and we returned, after a considerable time fruitlessly expended, with a very moderate specimen of our abilities in the meditative art of angling. Highly gratified with our short visit to the lake, we again took carriage, and made our way back to Saratoga. W.

RATTLESNAKES.

Few persons are aware of the existence of Rattlesnakes near Philadelphia. The writer has in his possession the rattles taken from a snake about thirty inches in length, killed by a farmer of New-Jersey, within twelve miles of this city. This gentleman last year, also killed another on the same tract of land, which had thirteen rattles. It was discovered on a private road which crossed his land; the extremities of the snake reached beyond each rut of the road, and was supposed to measure six feet in length.

PARTRIDGES.

A short excursion to the country will convince any one, that there may be anticipated a good fall's shooting at these birds. From some districts, I have been told by farmers, that they have never known a season of so great plenitude as the present. The writer himself counted no less than a dozen different male birds in one neighbourhood last week. This rapid increase is owing altogether to the care of farmers, and the forbearance of Sportsmen; and it is to be hoped the approaching fall will pass over, without marking the destruction of many of these birds.

From Nature and on Stone by J. G. Cooper

BIRDS EGGS

1 Shear Water
2 Lesser Tern
3 Piping Plover
4 Meadow Lark
5 Brown Thrush
6 Red Bird, or cardinal grosbeak
7 [illegible]
8 Chippana Sparrow
9 Purple Grackle
10 King Bird
11 Cat Bird
12 Blue Bird
13 Song Sparrow
14 [illegible]
15 Cow Bunting
16 Barn Swallow
17 White eyed Fly catcher
18 House Wren
19 Quail or Partridge
20 Sea Side Finch
21 [illegible]
22 [illegible]
23 Marsh Wren

BIRDS' EGGS,

AND DESCRIPTION OF NESTS.

[Plate XI. Vol. 2.]

1. *Black Skimmer.*

The nest is a mere hollow, formed in the sand, without any materials. The female lays three eggs, almost exactly oval, of a dirty white, marked with large spots of brownish black, and intermixed with others of pale Indian ink. These eggs measure one inch and three quarters, by one inch and a quarter. Half a bushel and more of eggs has sometimes been collected from one sand-bar, within the compass of half an acre. These eggs have something of a fishy taste; but are eaten by many people on the coast. The female sits on them only during the night, or in wet and stormy weather. The young remain for several weeks before they are able to fly; are fed with great assiduity by both parents; and seem to delight in lying with loosened wings, flat on the sand, enjoying its invigorating warmth. They breed but once in the season.

2. *Lesser Tern.*

About the twenty-fifth of May, or beginning of June, the female begins to lay. The eggs are dropt on the dry and warm sand, the heat of which, during the day, is fully sufficient for the purpose of incubation. This heat is sometimes so great, that one can scarcely bear the hand in it for a few moments, without inconvenience. The wonder would therefore be the greater, should the bird sit on her eggs during the day, when her warmth is altogether unnecessary, and perhaps injurious, than that she should cover them only during the damps of night, and in wet and stormy weather. They are generally four in number, and placed on the flat sands, safe beyond the reach of the highest summer tide. They are of a yellowish brown colour, blotched with rufous, and measure nearly an inch and three-quarters in length.

3. *Piping Plover.*

The nests of these birds are formed with little art; being merely shallow concavities dug in the sand, in which the eggs are laid, and, during the day at least, left to the influence of the sun to hatch them. The parents, however, always remain near the spot to protect them from injury, and probably, in cold rainy or stormy weather, to shelter them with their bodies. The eggs are three, sometimes four, large for the bird, of a dun clay colour, and marked with numerous small spots of reddish purple. A flat, dry sandy beach, just beyond the reach of the summer tides, is their favourite place for breeding.

4. *Meadow Lark.*

The nest of this species is built generally in, or below, a thick tuft or tussock of grass; it is composed of dry grass, and fine bent laid at bottom, and wound all around, leaving an arched entrance level with the ground; the inside is lined with fine stalks of the same materials, disposed with great regularity. The eggs are four, sometimes five, bluish white, marked with specks and several large blotches of reddish brown, chiefly at the thick end.

5. *Brown Thrush.*

Early in May, this bird builds its nest, choosing a thorn bush, low cedar, thicket of briars, dogwood sapling, or cluster of vines for its situation, generally within a few feet of the ground, and not unfrequently on the ground, at the foot of a small bush. Outwardly it is constructed of small sticks; then layers of dry leaves; and lastly lined with fine fibrous roots, but without any plaster. The eggs are five, thickly sprinkled with ferruginous grains. They generally have two brood in a season.

6. *Red-bird, or Cardinal Grosbeak.*

Early in May they begin to prepare their nest, which is very often fixed in a hollow, cedar, or laurel bush. Outwardly it is constructed of small twigs, tops of dry weeds, and slips of vine bark, and lined with stalks of fine grass. The female lays four eggs, thickly marked all over with touches of brownish olive, on a dull white ground; and they usually raise two brood in the season.

7. *Robin.*

The Robin builds a large nest, often on apple and cedar trees, plasters it in the inside with mud, and lines it with hay or fine grass. The female lays five eggs of a beautiful sea green.

8. *Chipping Sparrow.*

The Chipping-bird builds its nest most commonly in cedar bushes, and apple-trees, and lines it thickly with

cow-hair. The female lays four or five eggs of a light blue colour, with a few dots of purplish black near the great end.

9. *Purple Grakle.*

On the tallest cedar and pine trees they generally build their nests in company, about the beginning or middle of April; sometimes ten or fifteen nests being on the same tree, and measure five inches in diameter within, and four in depth; are composed outwardly of mud, mixed with long stalks and roots of a knotty kind of grass, and lined with fine bent and horse hair. The eggs are five, of a bluish olive colour, marked with large spots and straggling streaks of black and dark brown, also with others of a fainter tinge. They rarely produce more than one brood in a season. The trees where these birds build are often at no great distance from the farm-house, and overlook the plantations.

10. *King Bird.*

The King bird builds his nest very often on the horizontal branch of an apple tree; frequently also, as Catesby observes, on a sassafras tree, at a great height from the ground, and on pear trees. The outside consists of small slender twigs, tops of withered flowers of the plant yarrow, and others, well wove together with tow and wool; and is made large, and remarkably firm and compact. It is usually lined with fine dry fibrous grass, and horse hair. The eggs are five, of a very pale cream colour, or dull white, marked with a few large spots of deep purple, and other smaller ones of light brown, chiefly, though not altogether, towards the great end. They generally build twice in the season.

11. *Cat Bird.*

This bird builds its nest about the beginning of May. The place chosen for this purpose is generally a thicket of briars or brambles, a thorn bush, thick vine, cedar, or the fork of a small sapling; no great solicitude is shown for concealment, though few birds appear more interested for the safety of their nest and young. The materials are dry leaves and weeds, small twigs and fine dry grass: the inside is lined with the fine black fibrous roots of some plant. The female lays four, sometimes five eggs, of a uniform greenish blue colour, without any spots. They generally raise two, and sometimes three brood in a season.

12. *Blue Bird.*

About the middle of March, the Blue bird is seen, accompanied by his mate, visiting the box in the garden, or the hole in the old apple-tree, the cradle of some generations of his ancestors; and as soon as the spot is fixed on, they begin to clean out the old nest, and the rubbish of the former year, and to prepare for the reception of their future offspring.

The female lays five, and sometimes six eggs, of a pale blue colour; and raises two, and sometimes three broods in a season; the male taking the youngest under his particular care while the female is again sitting.

13. *Song Sparrow.*

The Song Sparrow builds in the ground, under a tuft of grass; the nest is formed of fine dry grass, and lined with horse hair; the eggs are four or five, thickly marked with spots of reddish brown on a bluish white ground; if not interrupted, it raises three broods in the season. Nests with young have been found as early as the twenty-sixth of April, and as late as the twelfth of August. What is singular, the same bird often fixes its nest in a cedar tree, five or six feet from the ground.

14. *Swamp Blackbird.*

About the twentieth of March, or earlier if the season be open, they appear in the middle states, in numerous though small parties, and frequent the low borders of creeks, swamps, and ponds, till about the middle of April, when they separate in pairs to breed; and about the last week in April, or first in May, begin to construct their nest. The place chosen for this is generally within the precincts of a marsh or swamp, meadow, or other like watery situation. The spot usually a thicket of alder bushes, at the height of six or seven feet from the ground; sometimes in a detached bush in a meadow of high grass; often in a tussock of rushes of coarse rank grass; and not unfrequently in the ground. In all of which situations they are found. When in a bush they are generally composed outwardly of wet rushes picked from the swamp, and long tough grass in large quantity, and well lined with very fine bent. The rushes, forming the exterior, are generally extended to several of the adjoining twigs, round which they are repeatedly and securely twisted: a precaution absolutely necessary for its preservation on account of the flexible nature of the bushes in which it is placed. The same caution is observed when a tussock is chosen, by fastening the tops together, and intertwining the ma-

terials of which the nest is formed with the stalks of rushes around. When placed in the ground, less care and fewer materials being necessary, the nest is much simpler and slighter than before. The female lays five eggs, of a very pale light blue, marked with faint tinges of light purple and long straggling lines and dashes of black. It is not uncommon to find several nests in the same thicket, within a few feet of each other.

15. *Cow Bunting.*

The most remarkable trait in the character of this species is the unaccountable practice it has of dropping its eggs into the nests of other birds, instead of building and hatching for itself; and thus entirely abandoning its progeny to the care and mercy of strangers.

About the twenty-fifth of March, or early in April, the Cow-pen Bird makes his first appearance from the south, sometimes in company with the Red-winged Blackbird, more frequently in detached parties, resting early in the morning, an hour at a time, on the tops of trees near streams of water, appearing solitary, silent and fatigued. They continue to be occasionally seen, in small solitary parties, particularly along creeks and banks of rivers, so late as the middle of June; after which we see no more of them until about the beginning or middle of October, when they re-appear in much larger flocks.

Those that pass in May and June, are frequently observed loitering singly about solitary thickets, reconnoitering, no doubt, for proper nurses, to whose care they may commit the hatching of their eggs, and the rearing of their helpless orphans. Among the birds selected for this duty are the following:—the Blue-bird, the Chipping Sparrow, the Golden-crowned Thrush, the Red-eyed Flycatcher, the Yellow-bird, the Maryland Yellow-throat, the White-eyed Flycatcher, the small Blue Gray Flycatcher, and the Black and White Creeper; and, no doubt, many others, to whom the same charge is committed.

There is never but one egg of the Cow Bunting dropped in the same nest. This egg is somewhat larger than that of the Blue bird, thickly sprinkled with grains of pale brown and gray on a dirty white ground. It is of a size proportionable to that of the bird.

16. *Barn Swallow.*

Early in May the Barn Swallow builds its nest. From the size and structure of the nest, it is nearly a week before it is completely finished. It is in the form of an inverted cone, with a perpendicular section cut off on that side by which it adhered to the wood. At the top it has an extension of the edge, or offset, for the male or female to sit on occasionally, as appears by the dung; the upper diameter is about six inches by five, the height externally seven inches. This shell is formed of mud, mixed with fine hay as plasterers do their mortar with hair, to make it adhere the better; the mud seems to be placed in regular strata, or layers, from side to side; the hollow of this cone, (the shell of which is about an inch in thickness,) is filled with fine hay, well stuffed in; above that is laid a handful of very large downy geese feathers; the eggs are five, white, specked and spotted all over with reddish brown. Owing to the semi-transparency of the shell, the eggs have a slight tinge of flesh colour. The whole weighs about two pounds. The situation of these nests is generally on the pin which unites the rafters together.

They have generally two broods in the season. The first make their appearance about the second week in June; and the last brood leave the nest about the tenth of August.

19. *White-Eyed Flycatcher.*

This bird builds a very neat little nest, often in the figure of an inverted cone; it is suspended by the upper edge of the two sides, on the circular bend of a prickly vine, a species of Smilax that generally grows in low thickets. Outwardly it is constructed of various light materials, bits of rotten wood, fibres of dry stalks, of weeds, pieces of paper, commonly newspapers, an article almost always found about its nest; all these substances are interwoven with the silk of caterpillars, and the inside is lined with fine dry grass and hair. The female lays five eggs, pure white, marked near the great end with a very few small dots of deep brown or purple. They generally raise two brood in a season. They seem particularly attached to thickets of this species of Smilax, and make a great ado when any one comes near their nest; approaching within a few feet, looking down, and scolding with great vehemence.

18. *House Wren.*

This well known and familiar bird arrives about the middle of April; and about the eighth or tenth of May begins to build its nest, sometimes in the wooden cornice under the eaves, or in a hollow cherry tree, but most commonly in small boxes, fixed on the top of a pole, in or near the garden, to which he is extremely partial, for the great number of caterpillars and other larvæ with which it constantly supplies him. If all these conveniences are wanting, he will even put up with an old hat, nailed on the weather-boards, with a small hole for entrance; and

if even this be denied him, he will find some hole, corner, or crevice, about the house, barn, or stable, rather than abandon the dwellings of man. The twigs with which the outward parts of the nest are constructed are short and crooked that they may the better hook in with one another, and the hole or entrance is so much shut up to prevent the intrusion of snakes or cats, that it appears almost impossible the body of the bird could be admitted; within this is a layer of fine dried stalks of grass, and lastly feathers. The eggs are six or seven, and sometimes nine, of a red purplish flesh colour, innumerable fine grains of that tint being thickly sprinkled over the whole egg. They generally raise two brood in a season; the first about the beginning of June, the second in July.

19. *Quail, or Partridge.*

The Quail begins to build early in May. The nest is made on the ground, usually at the bottom of a thick tuft of grass that shelters and conceals it. The materials and leaves are fine dry grass, in considerable quantity. It is well covered above, and an opening left on one side for entrance. The female lays from fifteen to twenty-four eggs, of a pure white without any spots.

20. *Sea-Side Finch.*

The nest of this species is found along the margins of the sea and salt water inlets, and is built among the tall grass and rushes common to these parts; the materials are externally of coarse salt grass, and inside of the smaller fibres of the same article; the eggs are four or five in number, and of a light blue ground, thickly sprinkled with dark brown spots, more particularly at the great end.

21. *Black and White Creeper.*

This bird completes its nest about the middle of May, and is generally fixed on the ground, at the root of a bush or sapling, and is composed externally of leaves, and inside of slight layers of cow or horse hair; no other substances compose its nest. The eggs are five in number, of a pale flesh colour, sprinkled thickly with light reddish brown spots. This nest is also a receptacle for the eggs of the Cow Bunting.

22. *Black-Capt Titmouse.*

About the middle of April, these birds begin to build, choosing the deserted hole of a squirrel or woodpecker, and sometimes with incredible labour digging out one for themselves. The female lays six white eggs, marked with minute specks of red; the first brood appears about the beginning of June, and the second towards the end of July.

23. *Marsh Wren.*

This little bird excels in the art of *design*, and constructs a nest, which, in durability, warmth, and convenience, is scarcely inferior to one, and far superior to many other birds. This is formed outwardly of wet rushes mixed with mud, well intertwisted, and fashioned into the form of a cocoa nut. A small hole is left two-thirds up, for entrance, the upper edge of which projects like a pent house over the lower, to prevent the admission of rain. The inside is lined with fine soft grass, and sometimes feathers; and the outside, when hardened by the sun, resists every kind of weather. This nest is generally suspended among the reeds, above the reach of the highest tides, and is tied so fast in every part to the surrounding reeds, as to bid defiance to the winds and the waves. The eggs are usually six, of a dark fawn colour, and very small. The young leave the nest about the twentieth of June, and they generally have a second brood in the same season.

POISONOUS SERPENTS.

Of the venomous serpents, the Rattlesnake of America, and the Cobra de Capella of India, are the most formidable out of Europe; while the Viper, which, compared with the former, is of little import, is the only European serpent which bears a venomous character; and the latter animal is annually so diminishing in numbers, that its complete extinction may be calculated on at no very distant period. Climate, we know, has a great influence in the production and increase of reptiles of every kind, as well as in imparting activity to the poison peculiar to venomous animals; and from this circumstance, we can readily comprehend, why the most formidable animals are to be met with in the warmest latitudes. But it is well understood, if any credit can be given to historians, that ancient Europe was infested with serpents, both in number and character, of which we hear nothing at the present day; and the common Viper, we know, is annually on the decline. We must, therefore, look for some other cause independently of climate, for this fortunate change in the natural history of Europe; and we shall probably

find it, in the advance of cultivation and agriculture peculiar to modern Europe, and to this country in particular; by which impenetrable forests and woods, that afforded shelter to, and nurtured such animals, have been cut down and cleared; extensive swamps, in which they were also to be found, have been drained; and the haunts of venomous reptiles have, in every direction, been disturbed or destroyed by the hands of the cultivator.

Though venomous serpents differ from each other in magnitude, and in some of their external characters; yet they all possess in common, certain leading features by which they may be distinguished from the other classes which are not poisonous.

In the venomous the head is flattened, scaly, and large in proportion to the body; the snout is rather broad; the neck is thick; the skin is of a dirty hue, and less variegated in its colour, and the body does not taper towards the tail in so fine a point. But the leading feature of discrimination is in the formation of the upper jaw; the venomous serpent having two or more fangs attached to it, projecting out on each side beyond the other teeth, with which they inflict their poisonous wounds.

These fangs have, at their base in the upper jaw, a very small sac or bag immediately attached, which serves as a receptacle to the poison that has been secreted by a glandular apparatus, situated at the back part of the head, and behind each ear, and which by means of tubes or canals running through the roof of the mouth, is conveyed into the sac to be ready for use. The fang itself to which the sac is attached, is tubular; having an orifice on its outward extremity large enough to admit of the fluid being ejected by the pressure of the surrounding muscles, when the animal is excited to bite.

The poison contained in the bag, is a yellowish, viscid, tasteless liquid, very small in quantity, which, injected into the blood vessels, proves frequently fatal: but which may be taken into the mouth and stomach without any danger. Indeed it is a common practice with the Viper catchers, to suck the wound when the bite has been inflicted, and we have witnessed the same practice in the West Indies among the negroes when bitten by any venomous animal.

When the sac is ruptured, (as may be effected by drawing the teeth of the animal,) the power of poisoning is destroyed; and of this, the Viper catchers avail themselves, by irritating the animal to seize a piece of cloth, which the Viper grasps so closely, as easily to admit of the tooth being extracted.

In Bingley's Animal Biography, the name of a gentleman is mentioned, who saw a Rattlesnake, in which the fangs had been extracted, that was so completely tamed, "that it would turn its back to be scratched with the same delight, that a cat displays when rubbed before a fire; and would answer to the calls of the boys, and follow them like any other domesticated animal." In the same manner, the Cobra de Capella is tamed in India, and the Viper in England.

The flesh of all these animals, so far from being poisonous, is extremely nutritive; and among savage nations, is gale on the Rattlesnake, and cook it as others do eels; and considered a great delicacy. "The American Indians rethe peccary, the vulture, and other ravenous birds, feed on its flesh." The negroes in the West Indies often make snakes a part of their diet; and the use of the Viper has long been well understood in England.

The *Crotalus*, or *Rattlesnake*, is peculiar to America, and is found in almost every part of it, from the Straits of Magellan to Canada. It reaches its greatest magnitude, however, and assumes its most violent character, in the warmer American latitudes, where humidity mostly prevails, and where cultivation has made the least progress. It is distinguished from other serpents, by the number of its scales on the abdomen and the under surface of its tail; in having a double set of poisonous fangs; and by the tail terminating in a large scaly appendage, consisting of several articulated horny processes, which move and make a rattling noise.

The Rattlesnake is divided into five species, each differing in their external character, size, and malignancy; of which the *Crotalus Horridus* is by far the largest and most formidable. They are all, like the Viper, viviparous; that is, they produce their young alive, and completely formed, generally about twelve in number; and, like that animal also, they receive them into their mouth, when alarmed or threatened with danger.

The *Crotalus Horridus*, or *Bandied Rattlesnake*, is from five to eight feet in length, and its body is about the circumference of the human arm; the back being of an orange tawny mixed with blue, the belly of an ash colour inclining to the aspect of lead; while the head is distinguished by a scale, hanging like a pent-house over each eye. But the most curious part of its external conformation is its tail, from which the animal derives its name. This consists of a kind of rattle, formed of a certain number of loosely connected joints or articulations, commencing when the animal is about three years old, and adding one each succeeding year; so that they generally judge of its age by the number of articulations of its tail, which, in some instances, have amounted to nearly forty.

This apparatus, when taken from the tail, bears a resemblance to the curb chain of a bridle, and is composed of a certain number of thin, hard, hollow bones, loosely connected to each other; so that when the animal shakes its

tail, (which it always does when irritated and alarmed,) it produces a noise like a rattle. As this is to be heard at a considerable distance, it affords time for escape to those animals that otherwise might be in the greatest danger from its approach. This animal, however, never inflicts a wound upon man, excepting when trodden upon, or irritated; but, on the contrary, flies from his advance whenever he finds the least chance of escaping; and, when we add to this circumstance, the precautions observed by the inhabitants, when engaged in the woods where these animals prevail, it will easily be understood, why wounds from the bite of a Rattlesnake, are not of very frequent occurrence.

When, however, the animal is accidentally or intentionally irritated, it immediately throws itself into a circle, pushes back its head, and with great rapidity and violence, injects its deadly poison into the object of its vengeance; and according to the degree of irritation, repeats its attack as often as its strength will allow.

The bite, at first, resembles the sting of the wasp or bee; but the parts rapidly swell, become livid, and extend to the body and head, followed by delirium, fainting fits, convulsions, general swelling and discoloration of the body, and death; which takes place, in some instances, in three hours after the bite has been inflicted; at other times, at more distant periods; and if the weather has not been extremely hot, or the animal much enraged, the wounded man has a distant chance of recovery.

This tardiness in the operation of the Rattlesnake poison, may be attributed to climate; as we know that the whole of the snake tribe become torpid as the winter approaches; and that they increase in power and activity upon the temperature of the atmosphere advancing, when their bites become in proportion formidable and dangerous. Much may also depend upon a large blood-vessel being wounded, or only one of its extreme branches; the poison, in the former instance, being conveyed more rapidly into the system than in the latter, when there may be time for its being so diluted as considerably to weaken its efficacy. This observation will apply to the bites of all venomous animals; and it will serve to explain, why we sometimes hear of very rapid effects being produced by treatment, and at other times, why the patient recovers even without the trial of any remedy.

A circumstance is related which strongly evinces the great activity of the Rattlesnake poison.

"An American farmer was one day mowing with his negroes, when he by chance trod on a Rattlesnake, that immediately turned upon him and bit his boot. At night, when he went to bed, he was attacked with sickness; he swelled, and before a physician could be called in, he died. All his neighbours were surprised at the suddenness of his death; but the corpse was buried without examination. A few days after, one of his sons put on his father's boots, and at night when he pulled them off, he was seized with the same symptoms, and died on the following morning. At the sale of the effects, a neighbour purchased the boots; and on putting them on, experienced the like dreadful symptoms with the father and son. A skilful physician, however, being sent for, who had heard of the preceding affair, suspected the cause, and by applying proper remedies recovered the patient. The fatal boots were now examined, and the two fangs of the snake were discovered to have been left in the leather, with the poison bladder adhering to them. They had penetrated entirely through; and both the father, the son, and the purchaser of the boots, had imperceptibly scratched themselves with their points on pulling them off."

The *Cobra de Capello*, or *Hooded Serpent*, to which are given the different appellations of Coluber Naja, Spectacle Serpent, and the like, is a native of the East Indies, and of South America; and is still a more formidable animal than the Rattlesnake, as its bite is stated to be followed by certain and speedy death. A near relation of ours, who has passed many years in India, informed us that he has been witness to three persons being killed in seven minutes from its bite; and we have other instances of the rapidity of this most destructive poison when received into the human frame—a circumstance not to be wondered at, when we take into consideration the heat of the country of which it is a native; though the effects of the poison, like that of the Rattlesnake, will no doubt be varied by season, and by the manner in which the bite be inflicted.

This animal is from three to six feet in length, and about four inches in circumference. Its head is smaller in proportion to its body, than either the Rattlesnake or the Viper; having on its neck a tumour or loose mass of integument, flat, and covered with scales, and on the top of it, a very conspicuous patch resembling a pair of spectacles. Its colour is a pale rusty brown, and beneath, a bluish white tinged with yellow—the tail, unlike the other serpents described, tapering to a slender, sharply pointed extremity. Its eyes are peculiarly shining, fierce, and bright. Its fangs, with which it inflicts its deadly wound, are placed in the upper jaw, and their mechanism is the same as that of other venomous serpents. Like them it retreats before human pursuit; but, when irritated, it is much more active in its movements, and more decided in its attacks. When preparing to assail its enemy, the body is erected, the head is bent down so as to admit of the integuments of the neck being extended over it in the

form of a hood or cloak, from whence it derives its name; when, opening its mouth, and exhibiting its poisonous fangs, it springs on its enemy with the greatest agility and effect. Its bites, we have already stated, have a most deadly tendency, which has been fully illustrated by Mr. Boag, in the New Annual Register for 1800; though, from the causes we have noticed, instances are not wanting of persons recovering from them without the aid of any remedy.

The greatest enemy to this serpent is the ichneumon, or mangoose weasel, which feeds upon snakes and other reptiles. When the ichneumon falls in with the Cobra de Capello, the former takes every opportunity of provoking the first attack; placing himself in an attitude the most favourable to slip on one side and seize the head of his antagonist, which most frequently produces instant death. But if it fail, he bites the animal's tail to make him rise again, when the second seizure generally proves successful. If bitten by the serpent, the weasel sucks the poison from the wound; and feeds upon an herb which, in India, is considered to be an antidote, and thus escapes altogether the mortal effects which other animals uniformly experience from the bite of this very formidable serpent.

The poison both of the Rattlesnake and of the Cobra de Capello, is collected and preserved by the untutored Indians for the purpose of arming their arrows; and the consequences of the wounds they inflict, from an instrument so destructive, may be easily anticipated. The food of these snakes is confined to birds, and to small animals.

There are many other poisonous serpents of a very dangerous character to be met with in America, in Africa, and in the East and West Indies; but as the two we have noticed may be considered the most formidable, we have thought it sufficient to confine our observations to them; more particularly as the symptoms which follow the bites of all such venomous animals, appear to be much the same, differing only in degree and consequences.

Pain, swelling, discoloration of the parts affected, an extension of these symptoms to those parts through which the poison has to pass on its way to the system, and an enlargement and discoloration of the whole body; a small quick pulse, fainting fits, vomiting, jaundice, delirium, hiccup, and convulsions, close the scene, and mark the fatal issue in those cases where speedy relief has not been obtained, or where the natural resources of the constitution are not sufficient to resist the morbid effects of the poison.

With respect to the treatment of these most formidable symptoms, when produced by the bite of the Rattlesnake, the Cobra de Capello, and of other foreign serpents, without experience, we can have little to offer but conjecture.

We are told of a variety of remedies, however, that are used in countries where these animals prevail; but these are so opposite in their nature and tendency, that we hardly know how to attach importance to their efficacy.

The serpentarii, or Virginian snake root, and the seneka, or Rattlesnake root, are each used topically in the form of poultices, and given internally, and have had the reputation, in America, of curing the bite of the Rattlesnake and of other American serpents. And the head of the animal bruised and laid upon the part affected, as well as the topical application of a paste prepared by the Indians, to which they have given the appellation of snake-stone, are also reputed specifics in such cases; but we fear the efficacy of each is entitled to but little credit. If applications can be of any avail in casualties so desperate, assiduous frictions of unctuous substances, but particularly of olive oil, or of equal parts of laudanum and volatile alkali, over the parts affected, and full doses of carbonate of ammonia conjoined with antispasmodics administered internally and frequently repeated, from their uniform success in the bite of the viper, appear to be well calculated to produce good effects, and are therefore well worthy of trial.

Dr. Orfila, a French author, who has published a valuable treatise on poisons, has recommended the application of a ligature above the wounded part, so as to check the returning blood to the heart, without stopping the circulation; and then to apply caustics, so as to destroy deeply the whole of the surrounding parts. His internal remedies are volatile alkali, wine, and active diaphoretics.

In the second volume of the Medico-Chirurgical Transactions, Mr. Ireland, then surgeon to the 60th regiment, has given an account of four cases, in which arsenic had been successfully administered internally for some very desperate bites from the Coluber Carinatus, a most venomous serpent, peculiar to the island of St. Lucia, in the West Indies; and from whose bites, an officer and several men belonging to the 68th regiment, had some months before fallen a sacrifice.

In the four successful cases to which he has alluded, from the flesh being much torn by the bites, he removed the rugged edges of the integuments, and administered two drachms of Fowler's solution, (which is equal to one grain of arsenic,) in a draught composed of peppermint water and ten drops of laudanum; to which, when taken, half an ounce of lime juice was added, to produce the effervescent effect; and this was repeated every half hour for four successive hours; the parts being frequently fomented and rubbed with a liniment, composed of half an ounce of oil of turpentine, and an ounce and a half of olive oil. In a few days, the patients recovered, and returned to their

duty. He succeeded on another case at Martinique, where the patient was bitten by a serpent, reported to be as venomous and fatal as that of St. Lucia.

Mr. Boag, who has had some experience in the bites of the Gobra de Capello, recommends a weak solution of the nitrate of silver to be assiduously applied to the part, and small doses of it to be given internally. Should, however, future experience decide upon the inefficacy of all these remedies; in that case, the only security against the consequences of wounds so alarming, (if security is to be obtained,) would be a very deep extirpation of the surrounding parts, or the rapid extinction of the vital principle in them by the most active caustics.—*Lempriere's Nat. Hist.*

INFLUENCE OF MAN IN DOMESTICATING WILD ANIMALS.

It has been well observed by M. F. Cuvier and M. Dureau de la Malle, that unless some animals had manifested in a wild state an aptitude to second the efforts of man, their domestication would never have been attempted. If they had all resembled the wolf, the fox, and the hyæna, the patience of the experimentalist would have been exhausted by innumerable failures before he at last succeeded in obtaining some imperfect results; so, if the first advantages derived from the cultivation of plants had been elicited by as tedious and costly a process as that by which we now make some slight additional improvement in certain races, we should have remained to this day in ignorance of the greater number of their useful qualities.

It is undoubtedly true, that many new habits and qualities have not only been acquired in recent times by certain races of dogs, but have been transmitted to their offspring. But in these cases it will be observed, that the new peculiarities have an intimate relation to the habits of the animal in a wild state, and therefore do not attest any tendency to departure to an indefinite extent from the original type of the species. A race of dogs employed for hunting deer in the platform of Santa Fé, in Mexico, affords a beautiful illustration of a new hereditary instinct. The mode of attack, observes M. Roulin, which they employ, consists in seizing the animal by the belly and overturning it by a sudden effort, taking advantage of the moment when the body of the deer rests only upon the fore-legs. The weight of the animal thus thrown over, is often six times that of its antagonist. The dog of pure breed inherits a disposition to this kind of chase, and never attacks a deer from before while running. Even should the latter, not perceiving him, come directly upon him, the dog steps aside and makes his assault on the flank, whereas other hunting dogs, though of superior strength and general sagacity, which are brought from Europe, are destitute of this instinct. For want of similar precautions, they are often killed by the deer on the spot, the vertebræ of their neck being dislocated by the violence of the shock.

A new instinct also has become hereditary in a mongrel race of dogs employed by the inhabitants of the banks of the Magdalena, almost exclusively in hunting the white-lipped pecari. The address of these dogs consists in restraining their ardour, and attaching themselves to no animal in particular, but keeping the whole herd in check. Now, among these dogs some are found, which, the very first time they are taken to the woods, are acquainted with this mode of attack; whereas, a dog of another breed starts forward at once, is surrounded by the pecari, and whatever may be his strength is destroyed in a moment.

Some of our countrymen, engaged of late in conducting the principal mining association in Mexico, carried out with them some English greyhounds of the best breed, to hunt the hares which abound in that country. The great platform which is the scene of sport is at an elevation of about nine thousand feet above the level of the sea, and the mercury in the barometer stands habitually at the height of about nineteen inches. It was found that the greyhounds could not support the fatigues of a long chase in this attenuated atmosphere, and before they could come up with their prey, they lay down gasping for breath; but these same animals have produced whelps which have grown up, and are not in the least degree incommoded by the want of density in the air, but run down the hares with as much ease as the fleetest of their race.

The fixed and deliberate stand of the pointer has with propriety been regarded as a mere modification of a habit, which may have been useful to a wild race accustomed to wind game, and steal upon it by surprise, first pausing for an instant in order to spring with unerring aim. The faculty of the Retriever, however, may justly be regarded as more inexplicable and less easily referrible to the instinctive passions of the species. M. Majendie, says a French writer in a recently published memoir, having learnt that there was a race of dogs in England, which stopped and brought back game of their own accord, procured a pair, and having obtained a whelp from them, kept it constantly under his eyes, until he had an opportunity of assuring himself that, without having received any instruction, and on the very first day that it was carried to the chase, it brought back game with as much steadiness as dogs which had been schooled into the same manœuvre by means of the whip and collar.

Such attainments, as well as the habits and dispositions which the Shepherd's Dog, and many others inherit, seem to be of a nature and extent which we can hardly explain by supposing them to be modifications of instincts necessary for the preservation of the species in a wild state. When such remarkable habits appear in races of this species, we may reasonably conjecture that they were given with no other view than for the use of man, and the preservation of the dog which thus obtains protection.

As a general rule, we fully agree with M. F. Cuvier, that, in studying the habits of animals, we must attempt, as far as possible, to refer their domestic qualities to modifications of instincts which are implanted in them in a state of nature; and that writer has successfully pointed out, in an admirable essay on the domestication of the mammalia, the true origin of many dispositions which are vulgarly attributed to the influence of education alone. But we should go too far if we did not admit that some of the qualities of particular animals and plants may have been given solely with a view to the connexion which it was foreseen would exist between them and man—especially when we see that connexion to be in many cases so intimate, that the greater number, and sometimes all the individuals of the species which exist on the earth, are in subjection to the human race.

We can perceive in a multitude of animals, especially in some of the parasitic tribes, that certain instincts and organs are conferred for the purpose of defence or attack against some other species. Now if we are reluctant to suppose the existence of similar relations between man, and the instincts of many of the inferior animals, we adopt an hypothesis no less violent, though in the opposite extreme to that which has led to imagine the whole animate and inanimate creation to have been made solely for the support, gratification, and instruction of mankind.

Many species most hostile to our persons or property multiply in spite of our efforts to repress them; others, on the contrary, are intentionally augmented many hundredfold in number by our exertions. In such instances we must imagine the relative resources of man and of species, friendly or inimical to him, to have been prospectively calculated and adjusted. To withhold assent to this supposition would be to refuse what we must grant in respect to the economy of Nature in every other part of the organic creation; for the various species of contemporary plants and animals have obviously their relative forces nicely balanced, and their respective tastes, passions, and instincts so contrived, that they are all in perfect harmony with each other. In no other manner could it happen, that each species, surrounded as it is by countless dangers, should be enabled to maintain its ground for periods of considerable duration.

The docility of the individuals of some of our domestic species extending, as it does, to attainments foreign to their natural habits and faculties, may perhaps have been conferred with a view to their association with man. But lest species should be thereby made to vary indefinitely, we find that such habits are never transmissible by generation.

A pig has been trained to hunt and point game with great activity and steadiness; and other learned individuals of the same species, have been taught to spell; but such fortuitous acquirements never become hereditary, for they have no relation whatever to the exigencies of the animal in a wild state, and cannot therefore be developments of any instinctive propensities.

An animal in domesticity, says M. F. Cuvier, is not essentially in a different situation in regard to the feeling of restraint from one left to itself. It lives in society without constraint, because without doubt it was a social animal, and it conforms itself to the will of man, because it had a chief to which in a wild state it would have yielded obedience. There is nothing in its new situation that is not conformable to its propensities; it is satisfying its wants by submission to a master, and makes no sacrifice of its natural inclinations. All the social animals when left to themselves form herds more or less numerous, and all the individuals of the same herd know each other, are mutually attached, and will not allow a strange individual to join them. In a wild state, moreover, they obey some individual, which by its superiority has become the chief of the herd. Our domestic species had originally this sociability of disposition, and no solitary species, however easy it may be *to tame it*, has yet afforded true domestic races. We merely, therefore, develope to our own advantage, propensities which propel the individuals of certain species to draw near to their fellows.

The sheep which we have reared is induced to follow us, as it would be led to follow the flock among which it was brought up, and when individuals of gregarious species have been accustomed to one master, it is he alone whom they acknowledge as their chief, he only whom they obey.—"The elephant only allows himself to be led by the carnac whom he has adopted; the dog itself, reared in solitude with its master, manifests a hostile disposition towards all others; and every body knows how dangerous it is to be in the midst of a herd of cows, in pasturages that are little frequented, when they have not at their head the keeper who takes care of them."

"Every thing, therefore, tends to convince us, that formerly men were only, with regard to the domestic animals, what those who are particularly charged with the care of them still are, namely, members of the society,

which these animals form among themselves, and that they are only distinguished in the general mass by the authority which they have been enabled to assume from their superiority of intellect. Thus, every social animal which recognizes man as a member, and as the chief of its herd, is a domestic animal. It might even be said that from the moment when such an animal admits man as a member of its society, it is domesticated, as man could not enter into such a society without becoming the chief of it."

But the ingenious author whose observations we have here cited, admits that the obedience which the individuals of many domestic species yield indifferently to every person is without analogy in any state of things which could exist previously to their subjugation by man. Each troop of wild horses, it is true, has some stallion for its chief, who draws after him all the individuals of which the herd is composed; but when a domesticated horse has passed from hand to hand, and has served several masters, he becomes equally docile towards *any person*, and is subjected to the whole human race. It seems fair to presume, that the capability in the instinct of the horse to be thus modified, was given to enable the species to render greater services to man, and, perhaps, the facility with which many other acquired characters become hereditary in various races of the horse, may be explicable only on a like supposition. The amble, for example, a pace to which the domestic racers in Spanish America are exclusively trained, has, in the course of several generations, become hereditary, and is assumed by all the young colts before they are broken in.

It seems also reasonable to conclude, that the power bestowed on the horse, the dog, the ox, the sheep, the cat, and many species of domestic fowls, of supporting almost every climate, was given expressly to enable them to follow man throughout all parts of the globe—in order that we might obtain their services, and they our protection. If it be objected that the elephant, which, by the union of strength, intelligence, and docility, can render the greatest services to mankind, is incapable of living in any but the warmest latitudes, we may observe, that the quantity of vegetable food required by this quadruped would render its maintenance, in the temperate zone, too costly, and in the arctic impossible.

Among the changes superinduced by man, none appear, at first sight, more remarkable than the perfect tameness of certain domestic races. It is well known, that at however early an age we obtain possession of the young of many unreclaimed races, they will retain, throughout life, a considerable timidity and apprehensiveness of danger; whereas, after one or two generations, the descendants of the same will habitually place the most implicit confidence in man. There is good reason, however, to suspect that such changes are not without analogy in a state of nature, or, to speak more correctly, in situations where man has not interfered.

Thus Dr. Richardson informs us, in his able history of the habits of North American animals, that "in the retired parts of the mountains, where the hunters had seldom penetrated, there is no difficulty in approaching the Rocky Mountain sheep, which there exhibit *the simplicity of character so remarkable in the domestic species*, but where they have been often fired at, they are exceedingly wild, alarm their companions, on the approach of danger, by a hissing noise, and scale the rocks with a speed and agility that baffles pursuit."

It is probable, therefore, that as man, in diffusing himself over the globe, has tamed many wild races, so also he has made many tame races wild. Had some of the larger carniverous beasts, capable of scaling the rocks, made their way into the North American mountains before our hunters, a similar alteration in the instincts of the sheep would doubtless have been brought about.

No animal affords a more striking illustration of the principal points we have been endeavouring to establish than the elephant. For in the first place, the wonderful sagacity with which he accommodates himself to the society of man, and the new habits which he contracts, are not the result of time nor of modifications produced in the course of many generations. These animals will breed in captivity, as is now ascertained, in opposition to the vulgar opinion of many modern naturalists, and in conformity to that of the ancients Ælian and Columella. Yet it has always been the custom, as the least expensive mode of obtaining them, to capture wild individuals in the forests, usually when full grown, and in a few years after they are taken, sometimes, it is said, in the space of a few months, their education is completed.—*Lyell's Geology.*

MAHOGANY TREES.

There are three species of Mahogany:—Common Mahogany, (*Swietenia Mahogani,*) *Swietenia febrifuga*, and *Swietenia chloroxylon;* the first being a native of the West India Islands, and the central parts of America, and the second and third natives of the East Indies. They all grow to be trees of considerable magnitude—the first and second being among the largest trees known. They are all excellent timber.

Swietenia Mahagoni is, perhaps, the most majestic of trees; for though some rise to a greater height, this tree, like the oak and the cedar, impresses the spectator with the strongest feelings of its firmness and duration. In the rich valleys among the mountains of Cuba, and those that open upon the bay of Honduras, the Mahogany expands to so giant a trunk, divides into so many massy arms, and throws the shade of its shining green leaves, spotted with tufts of pearly flowers, over so vast an extent of surface, that it is difficult to imagine a vegetable production combining in such a degree the qualities of elegance and strength, of beauty and sublimity. The precise period of its growth is not accurately known; but as, when large, it changes but little during the life of a man, the time of its arriving at maturity is probably not less than two hundred years. Some idea of its size, and also of its commercial value, may be formed from the fact that a single log, imported at Liverpool, weighed nearly seven tons; was, in the first instance, sold for £378; resold for £525; and would, had the dealers been certain of its quality, have been worth £1000.

As is the case with much other timber, the finest Mahogany trees, both for size and quality, are not in the most accessible situations, and as it is always imported in large masses, the transportation of it for any distance over land is so difficult, that the very best trees, both on the islands and on the main land—those that grow in the rich inland vallies—defy the means of removal possessed by the natives. Masses of from six to eight tons are not very easily moved in any country; and in the mountainous and rocky one, where much attention is not paid to mechanical power, to move them is impossible. In Cuba, the inhabitants have neither enterprise nor skill adequate to felling the Mahogany trees, and transporting them to the shore, and thus the finest timber remains unused.

The discovery of this beautiful timber was accidental, and its introduction into notice was slow. The first mention of it is, that it was used in the repair of some of Sir Walter Raleigh's ships at Trinidad in 1597. The first that was brought to England was about the beginning of last century; a few planks having been sent to Dr. Gibbons, of London, by a brother, who was a West India captain. The Doctor was erecting a house in King-street, Covent Garden, and gave the planks to the workmen, who rejected it as being too hard. The Doctor's cabinet-maker, named Wollaston, was employed to make a candle-box of it, and as he was sawing up the plank he also complained of the hardness of the timber. But when the candle-box was finished, it outshone in beauty all the Doctor's other furniture, and became an object of curiosity and exhibition. The wood was then taken into favour: Dr. Gibbons had a bureau made of it, and the Dutchess of Buckingham another; and the despised Mahogany now became a prominent article of luxury, and at the same time raised the fortunes of the cabinet-maker by whom it had been at first so little regarded.

The Mahogany tree is found in great quantities on the low and woody lands, and even upon the rocks in the countries on the western shores of the Caribbean sea, about Honduras and Campeachy. It is also abundant in the Islands of Cuba and Hayti, and it used to be plentiful in Jamaica, where it was of excellent quality; but most of the larger trees have been cut down. It was formerly abundant on the Bahamas, where it grew, on the rocks, to a great height, and four feet in diameter. In the earliest periods it was much used by the Spaniards in ship-building. When first introduced by them it was very dark and hard, and without much of that beautiful variety of colour which now renders it superior to all other timber for cabinet work; but it was more durable, and took a higher polish with less labour. Of course it was wholly unknown to the ancients. It was first introduced in the sixteenth century, but it was not generally used in England till the eighteenth.

The Mahogany is a graceful tree, with many branches that form a very handsome head. The leafets are in pairs, mostly four, and sometimes three, but very rarely five; the pair opposite, and without any odd leafet at the point; they are smooth and shining, lance-shaped, entire at the edges like those of the laurel, and bent back: each leafet is about two inches and a half long, and the whole leaf is about eight inches. The flowers are small and whitish, and the seed-vessel has some resemblance to that of the Barbadoes cedar: hence some botanists have given the name of cedar to the tree.

This tree so far corresponds with the pine tribe, that the timber is best upon the coldest soils and in the most exposed situations. When it grows upon moist soils and warm lands, it is soft, coarse, spongy, and contains sap-wood, into which some worms will eat. That which is most accessible at Honduras is of this description; and therefore it is only used for coarser works, or for a ground on which to lay veneers of the choicer sorts. For the latter purpose it is well adapted, as it holds glue better than deal, and, when properly seasoned, is not so apt to warp or to be eaten by insects. When it grows in favourable situations, where it has room to spread, it is of much better quality, and puts out large branches, the junction of which with the stem furnish those beautifully curled pieces of which the choicest veneers are made. When among rocks and much exposed, the size is inferior, and there is not so much breadth or variety of shading; but

the timber is far superior, and the colour is more rich. The last description is by far the strongest, and is therefore the best adapted for chairs, the legs of tables, and other purposes in which a moderate size has to bear a considerable strain. Since the produce of Jamaica has been nearly exhausted, there are only two kinds known in the market. Bay wood, or that which is got from the continent of America, and Spanish wood, or the produce of the islands chiefly of Cuba and Hayti. Though the Bay wood is inferior to the other both in value and in price, it is often very beautiful, and may be obtained in logs as large as six feet square. It is, however, not nearly so compact as the other; the grain is apt to rise in polishing, and if it be not covered by a water-proof varnish, it is very easily stained. It also *gives to the tool* in carving, and is not well adapted for ornaments. Spanish wood cuts well, takes a fine polish, resists scratches, stains, and fractures much better, and is generally the only sort upon which much or delicate workmanship should be expended. The colours of Mahogany do not come well out without the application of oil or varnish; and if the best sorts be often washed with water, or long macerated in it, they lose their beauty, and become of a dingy brown. The red is deepened by alkaline applications, especially lime-water; but strong acids destroy the colour. When the surface is covered by a colourless varnish, which displays the natural tints without altering any of them, good Mahogany appears to the greatest advantage.

The *Febrifuga*, or East India Mahogany, is a very large tree. It grows in the mountainous parts of central Hindostan, rises to a great height with a straight trunk, which, towards the upper part, throws out many branches. The head is spreading, and the leaves have some resemblance to those of the American species. The wood is of a dull red colour, not so beautiful as common Mahogany, but much harder, heavier, and more durable. The natives of India account it the most lasting timber that their country produces, and therefore they employ it in their sacred edifices, and upon every occasion where they wish to combine strength and durability.

The *Chloroxylon* is chiefly found in the mountains of the Sircars, that run parallel to the Bay of Bengal, to the N. E. of the mouth of the River Godovery. The tree does not attain the same size as either of the former, and the appearance of the wood is different. It is of a deep yellow, nearly of the same colour as box, from which it does not differ much in durability, and it could be applied to the same purposes.

[*Lib. Ent. Knowl.*

THE TARANTULA.

The *Tarantula*, of the fatal effects of whose poison, and of the influence of music in the cure, so much has been said, is of the spider tribe, possessing in most particulars, all the characters peculiar to that species of insect. It is a native of Italy, Cyprus, Barbary, and the East Indies; in the two former countries, credulity on the one hand, and imposition on the other, have given it a quality which it does not merit, viz. the power of destroying human life by its bite, unless timely prevented by the most fascinating music. Accordingly, travellers in those countries have furnished us with a number of amusing anecdotes, strongly illustrative of the effects of superstition on the human mind, when unenlightened by the beams of science, or where tradition has closed the door to reason and the most obvious conviction. These anecdotes, which must be familiar to every reading person, we do not deem necessary here to detail; but shall merely observe, that the bite of the Tarantula is never inflicted but when accidentally irritated; and though it always produces most severe pain, swelling, and discolouration of the part, and in constitutions of particular irritability, fainting fits, spasmodic affections, and even convulsions; yet it has in no instance, within our experience, (founded upon a four years' residence in the south part of Europe and in Barbary,) proved fatal; nor could we learn from others, that such an effect was ever produced; the symptoms being readily removed by the remedies which are efficacious in the bites or stings of other venomous insects.

This animal, which like other spiders, is made up of two divisions united by a slender thread, the one consisting of the head and breast, the other of the belly, rather exceeds an inch in length, and is of an ash colour on its breast, belly, and legs, and underneath is distinguished by blackish rings. It has eight legs united like that of a lobster; and eight eyes, two of which are red, are larger than the others, and are placed in front; four others are placed transversely towards the mouth; the other two are nearer the back. This number of eyes seems necessary in an animal whose existence depends upon its activity and vigilance; and particularly as the eyes are immoveable in the socket, and therefore cannot, when required, turn in different directions.

Its poisonous mechanism consists of two nippers or fangs on the fore part of the head with strong points, toothed like a saw, and terminating in claws like those of a cat. A little below the point of the claw, there is a small hole through which the animal emits the poison; and from this apparatus, its means of attack and defence are derived.

Plate XII

Drawn on Stone from Nature by M. E. D. Brown, No. 5 Library St.

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SCARLET TANAGER. BLUE EYED YELLOW WARBLER.

It is stated to prefer the bare fields for its haunts, where the lands are fallow; but we have seen it near houses, and within the yards, and sometimes even in the adjoining apartments.

According to Bingley, it lays between seven and eight hundred eggs, which are hatched in the spring; the parents being very short-lived, and seldom surviving the winter. Like other spiders, it makes a net or wall round its dwelling, which is generally about four inches deep in the ground, and half an inch wide.

[*Lempriere's Nat. Hist.*

BLUE-EYED YELLOW WARBLER.

SYLVIA CITRINELLA.

[Plate XII. Vol. 2. Size of life.]

Yellow-poll Warbler, Lath. *Syn. v.* II. *p.* 515, *No.* 148.—*Arct. Zool. p.* 402, *No.* 292.—*Le Figuier tachete*, Buff. *Ois.* v. *p.* 285.—*Motacilla æstiva*, Turton's *Syst. p.* 615.—*Parus luteus, Summer Yellow-bird*, Bartram, *p.* 292.—*Motacilla æstiva*, Gmel. *Syst.* I. *p.* 996.—*Sylvia æstiva*, Lath. *Ind. Orn.* II. *p.* 551.—Vieill. *Ois. de l'Am. Sept. pl.* 95.—*Motacilla albicollis*, Gmel. *Syst.* I. *p.* 983, young.—*Sylvia albicollis*, Lath. *Ind. Orn.* II. *p.* 535, young.—*Ficedula Canadensis*, Briss. III. *p.* 492, 51, *t.* 26, *fig.* 3, male adult.—*Ficedula dominicensis*, Briss. III. *p.* 494, 52, *t.* 26, f. 5.—*Figuier de Canada*, Buff. *Pl. Enl.* 58, f. 2, adult male.—J. Doughty's Collection.

This is a very common summer species, and appears almost always actively employed among the leaves and blossoms of the willows, snow-ball shrub, and poplars, searching after small green caterpillars, which are its principal food. It has a few shrill notes, uttered with emphasis, but not deserving the name of song. It arrives in Pennsylvania about the beginning of May, and departs again for the south about the middle of September. According to Latham, it is numerous in Guiana, and is also found in Canada. It is a very sprightly, unsuspicious, and familiar little bird; is often seen in and about gardens, among the blossoms of fruit trees and shrubberies; and, on account of its colour, is very noticeable. Its nest is built with great neatness, generally in the triangular fork of a small shrub, near, or among briar bushes. Outwardly it is composed of flax or tow, in thick circular layers, strongly twisted round the twigs that rise through its sides, and lined within with hair, and the soft downy substances from the stalks of fern. The eggs are four or five, of a dull white, thickly sprinkled near the great end, with specks of pale brown. They raise two broods in the season. This little bird, like many others, will feign lameness to draw you away from its nest, stretching out his neck, spreading and bending down his tail until it trails along the branch, and fluttering feebly along to draw you after him; sometimes looking back to see if you are following him, and returning back to repeat the same manœuvres, in order to attract your attention. The male is most remarkable for this practice.

The Blue-eyed Warbler is five inches long and seven broad; hind head and back greenish yellow; crown, front, and whole lower parts, rich golden yellow; breast and sides streaked laterally with dark red; wings and tail deep brown, except the edges of the former, and the *inner* vanes of the latter, which are yellow; the tail is also slightly forked; legs a pale clay colour; bill and eye-lids, light blue. The female is of a less brilliant yellow, and the streaks of red on the breast are fewer and more obscure. Buffon is mistaken in supposing No. 1, of Pl. Enl. Plate lviii. to be the female of this species.—Wilson.

SCARLET TANAGER.

TANAGRA RUBRA.

[Plate XII. Vol. 2. Size of life.]

Tanagra rubra, Linn. *Syst.* I. *p* 314, 3.—*Cardinal de Canada*, Briss. *Orn.* III. *p.* 48, *Pl.* 2, *fig.* 5.—Lath. II. *p.* 217, *No.* 3.—*Scarlet Sparrow*, Edw. *Pl.* 343.—*Canada Tanager, and Olive Tanager, Arct. Zool. p.* 369, *No.* 237–238.—J. Doughty's Collection.

This is one of the gaudy foreigners, (and perhaps the most showy,) that regularly visit us from the torrid regions of the south. He is drest in the richest scarlet, set off with the most jetty black, and comes, over extensive countries, to sojourn for a time among us. While we consider him entitled to the rights of hospitality, we may be permitted to examine a little into his character, and endeavour to discover, whether he has any thing else to recommend him besides that of having a fine coat, and being a great traveller.

On or about the first of May this bird makes his appear-

ance in Pennsylvania. He spreads over the United States, and is found even in Canada. He rarely approaches the habitations of man, unless perhaps to the orchard, where he sometimes builds; or to the cherry trees in search of fruit. The depth of the woods is his favourite abode. There, among the thick foliage of the tallest trees, his simple and almost monotonous notes *chip, churr*, repeated at short intervals, in a pensive tone, may be occasionally heard; which appear to proceed from a considerable distance though the bird be immediately above you; a faculty bestowed on him by the beneficent Author of Nature, no doubt for his protection, to compensate in a degree for the danger to which his glowing colour would often expose him. Besides this usual note, he has, at times, a more musical chant, something resembling in mellowness that of the Baltimore Oriole. His food consists of large, winged insects, such as wasps, hornets, and humble-bees, and also of fruit, particularly those of that species of *Vaccinium* usually called huckle-berries, which in their season form almost his whole fare. His nest is built about the middle of May, on the horizontal branch of a tree, sometimes an apple tree, and is but slightly put together; stalks of broken flax, and dry grass, so thinly wove together, that the light is easily perceivable through it, form the repository of his young. The eggs are three, of a dull blue, spotted with brown or purple. They rarely raise more than one brood in a season, and leave us for the south about the last week in August.

Among all the birds that inhabit our woods, there is none that strike the eye of a stranger, or even a native, with so much brilliancy as this. Seen among the green leaves, with the light falling strongly on his plumage, he really appears beautiful. If he has little of melody in his notes to charm us, he has nothing in them to disgust. His manners are modest, easy, and inoffensive. He commits no depredations on the property of the husbandman; but rather benefits him by the daily destruction in spring of many noxious insects; and when winter approaches he is no plundering dependant, but seeks in a distant country for that sustenance which the severity of the season denies to his industry in this. He is a striking ornament to our rural scenery, and none of the meanest of our rural songsters. Such being the true traits of his character, we shall always with pleasure welcome this beautiful, inoffensive stranger, to our orchards, groves, and forests.

The male of this species, when arrived at his full size and colours, is six inches and a half in length, and ten and a half broad. The whole plumage is of a most brilliant scarlet, except the wings and tail, which are of a deep black; the latter handsomely forked, sometimes minutely tipt with white, and the interior edges of the wing feathers nearly white; the bill is strong, considerably inflated like those of his tribe, the edge of the upper mandible somewhat irregular, as if toothed, and the whole of a dirty gamboge or yellowish horn colour; this, however, like that of most other birds, varies according to the season. About the first of August he begins to moult; the young feathers coming out of a greenish yellow colour, until he appears nearly all dappled with spots of scarlet and greenish yellow. In this state of plumage he leaves us. How long it is before he recovers his scarlet dress, or whether he continues of this greenish colour all winter, I am unable to say. The iris of the eye is of a cream colour, the legs and feet light blue. The female is green above and yellow below; the wings and tail brownish black, edged with green.

The young birds, during their residence here the first season, continue nearly of the same colour with the female. In this circumstance, we again recognise the wise provision of the Deity, in thus clothing the female and the inexperienced young, in a garb so favourable to concealment among the foliage; as the weakness of the one, and the frequent visits of the other to her nest, would greatly endanger the safety of all. That the young males do not receive their red plumage until the early part of the succeeding spring, I think highly probable, from the circumstance of frequently finding their red feathers, at that season, intermixed with green ones, and the wings also broadly edged with green. These facts render it also probable that the old males regularly change their colour, and have a summer and winter dress; but this, farther observations must determine.

There is in the Brazils a bird of the same genus with this, and very much resembling it, so much so as to have been frequently confounded with it by European writers. It is the *Tanagra Brazilia* of Turton; and though so like, is a yet very distinct species from the present, as I have myself had the opportunity of ascertaining, by examining two very perfect specimens from Brazil, now in the possession of Mr. Peale, and comparing them with this. The principal differences are these: the plumage of the Brazilian is almost black at bottom, a very deep scarlet at the surface, and of an orange tint between; ours is ash coloured at bottom, white in the middle, and bright scarlet at top. The tail of ours is *forked*, that of the other cuneiform, or *rounded*. The bill of our species is more inflated, and of a greenish yellow colour—the others is black above, and whitish below towards the base. The whole plumage of the southern species is of a coarser, stiffer quality, particularly on the head. The wings and tail, in both, are black.

In the account which Buffon gives of the Scarlet Tana-

ger, and Cardinal Grosbeak, there appears to be very great confusion, and many mistakes; to explain which it is necessary to observe, that Mr. Edwards, in his figure of the Scarlet Tanager, or Scarlet Sparrow, as he calls it, has given it a hanging crest, owing no doubt to the loose, disordered state of plumage of the stuffed or dried skin from which he made his drawing. Buffon has afterwards confounded the two together by applying many stories originally related of the Cardinal Grosbeak, to the Scarlet Tanager; and the following he gravely gives as his reason for so doing. "We may presume," says he, "that when travellers talk of the warble of the Cardinal they mean the Scarlet Cardinal, for the other Cardinal is of the genus of the Grosbeaks, consequently a silent bird." This *silent* bird, however, has been declared by an eminent English naturalist, to be almost equal to their own nightingale! The count also quotes the following passage from Charlevoix to prove the same point, which, if his translator has done him justice, evidently proves the reverse. "It is scarcely more than a hundred leagues," says this traveller, "*south* of Canada, that the Cardinal begins to be seen. Their song is sweet, their plumage beautiful, and their head wears a crest." But the Scarlet Tanager is found even in Canada, as well as an hundred leagues to the south, while the Cardinal Grosbeak is not found in any great numbers north of Maryland. The latter, therefore, it is highly probable, was the bird meant by Charlevoix, and not the Scarlet Tanager. Buffon also quotes an extract of a letter from Cuba, which, if the circumstance it relates be true, is a singular proof of the estimation in which the Spaniards hold the Cardinal Grosbeak. "On Wednesday arrived at the port of Havana, a bark from Florida, loaded with Cardinal birds, skins, and fruit. The Spaniards bought the Cardinal birds at so high a price as ten dollars a piece; and notwithstanding the public distress, spent on them the sum of 18,000 dollars!"

With a few facts more, I shall conclude the history of the Scarlet Tanager. When you approach the nest, the male keeps cautiously at a distance, as if fearful of being seen; while the female hovers around in the greatest agitation and distress. When the young leave the nest, the male parent takes a most active part in feeding and attending them, and is then altogether indifferent of concealment.

Passing through an orchard one morning, I caught one of these young birds that had but lately left the nest. I carried it with me about half a mile, to show it to my friend, Mr. William Bartram; and having procured a cage, hung it up on one of the large pine trees in the Botanic garden, within a few feet of the nest of an *Orchard Oriole*, which also contained young; hoping that the charity or tenderness of the Orioles, would induce them to supply the cravings of the stranger. But charity with them, as with too many of the human race, began and ended *at home*. The poor orphan was altogether neglected, notwithstanding its plaintive cries; and, as it refused to be fed by me, I was about to return it back to the place where I found it; when, towards the afternoon, a Scarlet Tanager, no doubt its own parent, was seen fluttering round the cage, endeavouring to get in. Finding this impracticable he flew off, and soon returned with food in his bill; and continued to feed it till after sunset, taking up his lodgings on the higher branches of the same tree. In the morning, almost as soon as day broke, he was again seen most actively engaged in the same affectionate manner; and, notwithstanding the insolence of the Orioles, continued his benevolent offices the whole day, roosting at night as before. On the third or fourth day, he appeared extremely solicitous for the liberation of his charge, using every expression of distressful anxiety, and every call and invitation that nature had put in his power for him to come out. This was too much for the feelings of my venerable friend; he procured a ladder, and mounting to the spot where the bird was suspended, opened the cage, took out the prisoner, and restored him to liberty and to his parent, who with notes of great exultation accompanied his flight to the woods. The happiness of my good friend was scarcely less complete, and showed itself in his benevolent countenance; and I could not refrain saying to myself—If such sweet sensations can be derived from a simple circumstance of this kind, how exquisite, how unspeakably rapturous must the delight of those individuals have been, who have rescued their fellow beings from death, chains, and imprisonment, and restored them to the arms of their friends and relations! Surely in such godlike actions virtue is its own most abundant reward.—*Ib.*

A METHOD OF FORCING FRUIT TREES TO BEAR.

With a sharp knife make a cut in the bark of the branch, which you mean to force to bear, and not far from the place where it is connected with the stem; or if it be a small branch, or shoot, near to where it is joined to the larger bough: the cut is to go round the branch, or to encircle it, and to penetrate to the wood. A *quarter of an inch* from this cut, you make a second cut, like the first, round the branch, so that by both encircling the branch, you have marked a ring upon the branch, a quarter of an inch broad between the two cuts. The bark between

these two cuts you take clean away with the knife, down to the wood, removing even the fine inner bark, which immediately lies upon the wood; so that no connection whatever remains between the two parts of the bark, but the bare and naked wood appears white and smooth. But this bark-ring, which is to compel the tree to bear, must be made at the right time, that is, when in all nature the buds are strongly swelling or are breaking out into blossom. In the same year a callus is formed at the edges of the ring, on both sides, and the connection of the bark, that had been interrupted, is restored again without any detriment to the tree, or the branch operated upon, in which the artificial wound soon again grows over.

By this simple though artificial means of forcing every fruit tree, with certainty, to bear, you obtain the following important advantages:

1. You may compel every young tree of which you do not know the sort, to show its fruit, and decide sooner, whether, being of a good quality, it may remain in its first state, or requires to be grafted.

2. You may, thereby, with certainty, get fruit of every good sort, of which you wish to see the produce, in the next year.

3. This method may probably serve to increase considerably the quantity of fruit in the country.

The branches so operated upon are hung full of fruit, while the others, that are not ringed, often have nothing, or very little on them. This effect is easy to be explained from the theory of the motion of the sap. For when the sap moves slowly in a tree, it produces fruit-buds, which is the case in old trees; when it moves vigorously, the tree forms wood, or runs into shoots, as happens with young trees.—*Trans. Hort. Soc. Lon.*

PIGEON-SHOOTING NEAR BOSTON.

Mr. Editor:

About fifteen miles from the metropolis of New-England, stands a quiet little village, which is more known—I will not say celebrated—by its local traditions as the last resting-place of one of the Indian tribes, than from any bustling importance or remarkable scenery.

It contains, however, all the necessary attributes of a country town, viz: decayed old trees—gadding old women—a little white gothic church—and a little dirty village inn—with its usual incumbrances of the idle hangers-on—inveterate dram-drinkers, and furious politicians, who are continually promulgating the most heterogeneous of doctrines and theories, much wilder than ever addled the crazy noddles of Hobbes and Mandeville.

In this place—or at least half a mile this side of it—I have been passing a few weeks, following the general fashion of flying from the Cholera. My mornings I generally give to reading and study. But in these long summer afternoons, I have a most itching propensity for wandering.

From reading old Isaac Walton, I instantly, like many other unlucky wights, was seized with a terrible fishing mania. There was no brook or river ten miles round that I did not ransack with unparalleled ill luck. I hooked every thing but a fish—friend or foe, it made little difference—they all suffered alike from my infuriate zeal. I was continually losing my bait, or breaking my patent rod, in my endeavours to land a stick or bush, which my unlucky eye-sight deemed a perch or salmon trout.

Fishing I soon gave up as a bad job, and easily convinced myself I was not designed for an angler, but a shooter.

This no sooner popped into my brain than I purchased a first rate Joe Manton, with plenty of Dupont's superfine powder,—and shot enough to sink a seventy-four.

But here, again, I was soon let into a most important secret. It is this—a near-sighted man is never intended for either a sportsman or angler,—for after watching and toiling, and creeping about all day—staring over stone walls into cow-yards after peeps, and throwing stones into cornfields to start woodcocks, I gave this up also.

By the by, I recommend throwing stones into cornfields to all Sportsmen, who, if they lay their gun down, can find it again time enough to shoot,—a thing I never could do; or, if like me, they are troubled with a dog, who, because he was "fetched up" in a "genteel family," has an inveterate habit of keeping in the background. I presume he was early inculcated with the principle of giving way to his betters; neither blows, nor caresses, nor intreaties, could induce him to precede me; he always coolly, but firmly, insisted upon my going first. There was, of course, no moving a dog's obstinacy, when founded upon early inculcated principles—so I threw aside my Joe Manton, resolving to give up shooting till nature should give me eyes.

But, thus far, I have wandered with a vengeance. I commenced with the intention of giving you a history of Pigeon-shooting,—instead of it, I have been giving you my own abortive attempt at all kinds of shooting. I beg you to recollect the old adage, "Better late than never," and pardon me.

The course of my walks was frequently crossed by a veteran of a fellow, whose clothes were so variously and

extensively patched, that it would have puzzled the maker to tell the original colour.

His face, though it bore the marks of the storms of many years, and was deeply furrowed, yet was good-humoured and honest. He had but one eye,—but there was a waggery about it, that insensibly caused a smile. His hair had originally been brown, but time had both grizzled and thinned it,—and as a few straggling locks peeped out from under his outlandish head gear, he looked, for all the world, like some rugged philosopher, who felt convinced of the truth of his own theories, and never troubled himself about other people's.

He was accompanied by a ragged urchin, who carried a basket, containing four or five wild pigeons, which he called flyers.

The old man had with him three or four birch trees, about ten feet long, which had just been cut. I soon fell into conversation with him, and learned he was what is called a Pigeon-shooter, and had subsisted entirely by this employment for nearly *forty-five years*.

As the Pigeon season was now coming on, he was preparing his apparatus, which was as follows:—He selected, in the first place, a very high spot of ground, perfectly clear from wood or under-brush; upon this he built a hut of branches, large enough to contain one or two persons, with a very small entrance, through which you were obliged to creep upon your hands and knees. Opposite the hut, and at the distance of about four feet, was a pole, six inches in diameter, and about twenty feet long, inclined a little upwards. A little to the rear of the hut, and on each side, were erected four or five poles, twelve feet high—the summits of these were crowned by the flutterers, (wild Pigeons,) caught in a trap, with their eyes sewed up, and which were prevented from escaping, by a string of about five feet long. The tops of the poles also communicated with the hut by means of strings. Here the old man would take his stand, with his pipe and grandson, and provisions for the day, before sun-rise—keeping a sharp look-out all round the horizon for the pigeons, which, about the latter end of August, make their appearance in great numbers. The moment his lynx eye had detected a flock, and long before my inexperienced vision had seen a speck in the cloudless sky, he instantly pulled the strings—up went the flutterers—cock went his gun—(an old king's arm,) loaded to the muzzle with powder and shot,—and the old fellow fell to prating, i. e. imitating the cry of a wild Pigeon, which experience had taught him to do to perfection: in a few moments, the whole flock, which, perhaps, being headed the other way, would instantly wheel round, attracted by the old man's prating, and the fluttering of the decoys—and, in a vast swoop, would settle upon the

whole length of the pole, two or three deep. He would then fire the moment they alighted, and sweep the whole off.

His little boy would rush out, and bag the whole, sometimes amounting to twelve dozen, and lug them home—the old fellow, then, without moving from his lair, would load again, and prepare for another flock, which sometimes would not appear for hours, and perhaps not again the whole day.

His perseverance was indomitable,—for he would sit from sun-rise to sun-set, through the hottest days, without stirring from his seat,—and puffing out large columns of smoke from his broken pipe; his quick and restless eye piercing around in every direction. The least speck in the horizon—down would go the pipe—up go the flutterers—*prate, prate*, would echo through the forest,—again sound the gun—again the fluttering of the dying and wounded—and again all silent. At sun-set, he would go home, pick his Pigeons, which would sell for fifty cents a dozen, and the feathers for twelve and a half cents per pound. The Pigeon season lasted about six weeks, during which he averaged four dollars a day, which, together with the feathers, and the ducks which he would occasionally shoot on the lake, during the fall and winter, and the muskrats which his boy caught in traps, and whose skins sold pretty well, he told me he contrived to support himself through the year. He fought, he said, at the battle of Bunker-Hill, and was wounded there. "But," said he, with a sigh, "they forget what little good I have done—it is always the way with the world. I have no family to provide for, thank God, save my grandson, and he, when I die, shall have my blessing, my bible, and my gun—as long as there are Pigeons in the world, we shan't starve."

One of your Subscribers.

Boston, August 23d, 1832.

INTERESTING STORY OF A LOST CHILD.

On Thursday last, Jenison Alkire took with him his sister Elizabeth, and proceeded about three miles from home, for the purpose of watching a deer lick. They staid all night at the lick, and Jenison killed a deer. In the morning, finding his horse had left him, he prevailed on Elizabeth to stay at the camp with the deer, until he should go home and return with the horse. Jenison went home, returned with a horse, but found that his sister had left the camp. He called her in vain; he endeavoured to find her trace through the weeds, but without success. He then has-

tened home, and gave the alarm; the nearest neighbours were immediately convened, and proceeded in search of the child. Wm. Loudon, David Alkire, and Joseph Bennett, (all good woodsmen,) ascertained which way she had started, pursued the trail through laurel thickets, over mountains that were almost impassable. She had pursued a pretty straight course until she got within a short distance of the settlement on Holly, a branch of Big Elk river; from thence she fell back on a branch of the Little Kanawha, descended to its mouth, continued down the Kanawha river eight or ten miles, through thickets that bears can scarcely penetrate, crossed the river upwards of *sixty* times, got within a very short distance of Thomas M. Haymond's, when night overtook her. With a tomahawk, which she carried with her, she peeled the bark from a birch tree, scraped off the inside of the bark, and ate it. She then broke off the branches from some bushes, laid them in the bark for a bed; collected some more, of which she made a covering; peeled the bark off a hickory withe, tied one end round the neck of a dog which accompanied her, and the other end round her wrist, and in this manner laid down in her couch of bark, and slept all night. Those in pursuit followed her trail all day (Friday) until dark, then lighted pine torches, and continued in pursuit until daylight Saturday morning, at which time they first disturbed the slumbers of the lost child. When they found her, she seemed to be perfectly composed, and showed no signs of alarm.

The girl is eight or nine years old, and must have travelled twenty miles through a wilderness, rough and dreary enough to dishearten and alarm the most robust and resolute.

She satisfactorily explained the cause of having left the deer, by stating, that while Jenison was absent, a panther came and laid hold of it. Notwithstanding the hideous appearance of this unexpected visitant, she had the courage and presence of mind to advance and untie the dog before she took to flight.—*Western Enquirer.*

NATURAL HISTORY OF THE BASSE.

The Basse belongs to the third order of fishes, *Thoracici;* genus, *Perca.* The *generic character* is, teeth sharp, incurvate, numerous; gill covers, tryphyllous, scaly, serrated; first dorsal fin, spiny; scales hard and rough.

Perca Fluviabilis Flavus, the "*Yellow River Basse,*" or, the Yellow Basse of the River, is distinguished by having about nine spiny rays to the first dorsal fin, and fifteen soft ones to the second; these fins joined so closely as to appear like one: colour of the dorsal and pectoral fins, bright olive, with a blueish cast; ventral, a dirty white; anal and candal, light olive, tipt with red; tail, forked; body broad and tapering, rather thick, but of fair proportions, the large fish become thick and "hog-backed." Head, tolerably large, flattened towards the nose—the under lip longest, and protruded; mouth large; teeth small, sharp, and numerous; eye large, iris of a greenish yellow; gill, membranous, three rayed, and spiny. Colour, dark olive on the back; sides, a greenish yellow; at some seasons of a bright yellow; belly, white, shaded with black towards the ventral fin. The body is marked by broad, dark, transverse shades, or bars, which are very apparent shortly after being taken from the water. Scales, rather small, of an oval shape towards the outward part. Weight, generally, from twelve ounces to six pounds; some have been reported to weigh sixteen pounds; but this is considered fabulous.

The shape of the common sized Basse, is of the most beautiful proportions; of a fine oblong form, neither too thick nor too flat, which gives to it the appearance of great strength and activity. Their astonishing bounds from the water when hooked, is well known to all anglers; and their desperate struggles to escape, requires the utmost skill of the disciple of "honest Isaac" to secure his finny prey. It cannot be said of the Basse, however, that it is as active as some of its genus in Asia, where a species of perch are said to *climb trees,* and repose in the water collected in the hollow of the palm leaf, where it joins the trunk of the tree; but it is a fact to be attested by many an "honest angler," that Basse will spring four or five feet out of water when hooked—and jump over seines like a flock of sheep over a fence, to the mortification of the disappointed fisherman.

This fine fish is found in abundance in all the rivers and lakes west of the Allegheny mountains, and in some of the eastern waters, though there not so abundant. It is esteemed a delicious fish for the table—by some even preferred to the River Salmon and Pike. As a pan fish, it is superior to either. In the clear waters that run into the northern lakes, the Basse is found in immense numbers. In the Sciota, the Miamies, and the tributaries of the Ohio, it also abounds, but not so plentiful. The shape and colour of the Basse varies somewhat with its location. In the northern streams, where they are generally called the "Black Basse," the body is rounder, and the colour darker than in the Ohio. The colour also varies with the season, being brighter in autumn than in the spring. The shape of the smaller sized fish is also of a more oblong

or tapering form, than the older or larger fish, which appear to acquire breadth with age, and assume a "hog-backed" appearance, when they get to be over four pounds in weight.

The Basse spawns in this latitude about the latter end of May. The female makes her bed in the sand, under a bluff bank, or, in preference, under a steep, rocky shore, where the fall of the water cannot leave it exposed. She is attended by the male, and both watch with great care and vigilance until the young fry are able to shift for themselves.

No other fish are suffered to approach them at this season, that they can master; and sometimes, but very seldom, they will take the bait, while watching their spawn, but not unless it is placed very near to them.

The food of the Basse is principally minnows; but they feed on worms, crawfish, and many kinds of water insects. The angler generally uses the live minnow bait, at which this fish bites eagerly, and affords such sport in landing, as to be called an "exceedingly *game* fish." In the morning and evening, they come out into the shallow water around bars, and along the shore, in search of food; but during the day, they retire to the deep parts of the rivers, and generally take shelter under roots, logs, or rocks, or in the holes at the foot of mill-dams. Here they are sought for by the angler with great success.

This fish is of a social disposition, and generally found in small parties of six to twelve, sometimes fifty to one hundred, or more; and in the lakes and northern streams, in immense numbers.

In autumn they may be seen in shallow water, swimming along in small parties, stopping occasionally as if to listen, or reconnoitre; and then darting off suddenly with great rapidity. They are shy fish, and at the least noise take alarm; but so exceedingly voracious that they immediately return to their prey, darting after it a considerable distance, and frequently jumping out of the water in pursuit; this trait in their character is very favourable to the angler.

The Basse is of rather slow growth, and by some thought to attain a great age.

In the Ohio and its tributaries, there is a fish called the "Rock Basse;" broad and flat, somewhat resembling the White Perch in shape, but of a brilliant yellow, shaded with green.

There is also the Bank-Lick Basse, peculiar to a small stream opposite Cincinnati, that I have never noticed elsewhere. A small fish, weighing from one quarter to one and a half pounds, of a pale greenish olive—shaped like the White Perch—mouth remarkably thin and tender. These, with other fishes that inhabit the western waters, I may have occasion to notice hereafter.

PISCATOR.

Cincinnati, August, 1832.

THE PERILOUS SHOT.

BY C. W. THOMSON.

THE following ballad is founded on an incident which is said to have occurred, some years ago, at the Cape of Good Hope.

The hunter went forth at break of day,
And he left his babes behind;
He turned to look where his cottage lay
On the hill's green breast defined;
And thoughts, like the mist of the morning gray,
Came thronging across his mind.

The past and the future were mingled there,
With a crowd of hopes and fears,
And he breathed a soft but fervent prayer,
While his eyes were filled with tears,
That God would their innocent beauty spare
Through the lapse of coming years.

But most of all that his guardian arm
Would bless them through the day—
And keep them from the grasp of harm,
While he was far away—
Nor let one feeling of alarm
Upon their bosoms prey.

The hunter let his bright glance run
O'er the land where his cottage stood,—
The hunter turned to the glorious sun,
And he felt that God was good;
Then over his shoulder he threw his gun,
And he hied away to the wood.

'Twere vain to tell how the roe-buck fell
Before the hunter's aim—
'Twere vain to recount from meadow to mount,
How he tracked the wild and tame;
But the sun when low, saw a gallant show
Of the forest's choicest game.

'Twas a long day's hunt, and the hills were gray
When he reached his lowly cot:
It stood 'mid nature's wild array,
Though luxury owned it not.
But peace, like a mantle around it lay,
And he blessed his humble lot.

The sun had gone down, and the earth was still,
And the lake was as clear as the sky,
And a single star above the hill,
Looked down with its beaming eye;
And no sound was heard but the voice of the rill
That went in laughter by.

The hunter blessed his humble lot,
As he stood by his cottage-door,
And glad was he to reach the spot,
And rest in his home once more;
For his cares and his toils were all forgot
'Mid the mirth of his children's roar.

He entered his hut; but each mouth was shut,
Whence mirth was wont to flow;
For a sight was there that made him stare
With a terror that few can know;
A lion of India's fiercest breed
On his threshold was crouching low!

His wife was sitting in silent dread,
With a sad, desponding air;
While hid in her lap, each little head
Sought hope and safety there—
The eldest boy, with fear half dead
Stood close by his mother's chair.

'Twas not a time for long delay;
The hunter stole aside
To the back of his hut, where the lingering day
Crept in thro' a casement wide—
And he charged his gun for a deadly play,
And asked heaven his aim to guide.

The beast arose!—his heart's blood froze,
But despair did his purpose meet;
He sent the ball thro' his cottage hall,
On its errand stern and fleet—
It grazed the hair of his youthful heir,
As he stood by his mother's seat—
Then came a moan 'twixt a howl and a groan,
And the lion lay dead at her feet.

INSTRUCTIONS TO YOUNG SPORTSMEN.

No. IV.

The most interesting and important part of your excursion is now open to you. Having sprung the first covey of Partridges, and perhaps marked them to a favourable cover, and well scattered,—now is the time for you to deliberate,—and if ever you are to receive benefit by a favourable opportunity, this is the time also to embrace it. There is nothing to hurry you,—and you may exercise as much coolness as you choose, and suppress every rising emotion which tends to disconcert the mind. At this period, to most learners, the nerves are much affected, and the agitation, at the sudden flight and whirring sound of the flying game, is considerable,—eagerness, anxiety, and timidity, all take their part; and between these, and the judgment and philosophy of the young Sportsman, a conflict rages, which can only be favourably terminated by proper deliberation. Now, should this be your experience, permit me to say, that you are unprepared to encounter the game with any degree of success; and you had better take the accoutrements from your shoulders, and sit in the shade, and calm your feelings for half an hour at least; and if within your reach, take a draught of cold water. Do not fear the game will escape,—it will assuredly do so if you attempt to spring it,—but if it is in good cover, it will await your approach more than double the time sufficient to calm yourself. When, therefore, prepared to pursue your way, and your dogs come on the scattered birds,—act towards them as on previous cases, and walk direct to the game and flush it,—and so soon as you have fired, bring your dogs in to you as usual, and without removing from the spot, reload your gun. Whether you have killed, wounded, or missed the bird,—still do not leave the spot, as but a few steps more may alarm another bird, and this a third, and so on until, one by one, the remainder may rise, as is frequently the case, especially if better cover for them be near, until every bird escapes you.

This more particularly occurs, if on winging a bird you attempt to recover it. A wounded bird will always seek the company of its fellows, and if you or your dog chases it, there are nine chances out of ten that you will encounter the remnant of the flock, and thus for the sake of securing one bird, you will lose perhaps six or eight fine shots;—besides, I have seen persons so excited by shooting down and only winging a Partridge, as to drop their guns and give chase, and several minutes have elapsed before recovering it, after the most violent exertion, through bushes, thickets, and over fences, and many times all this labour has been fruitless, thus losing the bird, alarming the others, and rendering themselves unfit to pursue their excursion successfully for some time. A person thus situated is not fit to hunt for at least one hour. He has unnerved and heated himself, and done more injury to his dog, than a whole week of cautious hunting will repair. Should you wing your bird, you have a better chance of finding it, by letting your dog hunt it leisurely after you are ready again, as the bird will run its course, and leave a strong scent in the grass, and should you be training a young dog, this will be the most desira-

able opportunity to prove the quality of his nose, as well as derive a most useful lesson. Many persons train young dogs with birds loosed from the hands, which at best is but a poor plan, as the prisoner bird retains the scent of the hand, and makes it more easily found—and a young dog would stop at the scent of his master, when he would not at that of the bird—but in the former case, the wiles and dexterity of the wounded bird will certainly put the qualities of your dog to the test, and should he find and point this bird in a handsome style, it will be worth a dozen birds found and hunted in the usual manner.

The most favourable places to get your game scattered, are high grass and low bushes—and to be successful even here, you must exercise your best judgment in regard to the government of yourself and dogs—and this too without noise, as much of your sport will depend on silence; being careful in these respects, you will stand a good chance of getting the larger portion of the flock. In December, 1828, I recollect flushing a covey of partridges on high ground, which was covered with rye stubble, and, as is commonly the case, the flock divided into two parties, one division containing seven, and the other thirteen or fourteen birds; the former sought refuge in a low spot of ground covered with Indian grass, and low alder bushes, while the latter portion of the flock made a long flight to a tall wood, and by their course formed a right angle. It was late in the afternoon, and I felt convinced that the first party, owing to the good cover they were in, would remain motionless until the time approached for them to call together, to feed and roost. I therefore sought the more distant party first, and found them well scattered among the leaves on a hill side, out of which I got nine. I then proceeded to the small division, and by observing much caution and quietness, I shot the whole, making together sixteen out of a covey of not more than twenty-one birds.

I have known other sportsmen to meet with like success; and it is only mentioned here to show that you must exercise good judgment, and when you are thus situated, you had better always leave that portion or covey which are well covered, and proceed after those which are the most distant, especially if you are ignorant of the nature of the ground they have flown to. Not only young, but also experienced sportsmen, are anxious to secure the nearest birds, and cannot withstand the temptation of birds being within their almost certain grasp, and pass on to a more distant part of the same covey—but experience often proves, that in stopping to shoot at near birds, the others have completely escaped—for it is reasonable to suppose, that the part of a covey which flies to a distant spot, is gone to a strange neighbourhood, and this being the case, they feel insecure, and will only remain but a short time till their first fears are allayed, and hearing no one approach, will congregate, and move off with great rapidity.

There is scarcely a bird so tenacious of its hiding place as the partridge when alarmed, which will remain unmoved until the very fibres of the grass on which it rests are disturbed; and most sportsmen know how frequently these birds have been brushed out of the leaves from immediately under the dog's nose:—therefore leave no bush, tussock, briar, or likely spot untried, in the region where you have birds scattered—and after having tried once, do not be discouraged at trying again, until you can flush no more birds. There is a circumstance attending the partridge which puzzles philosophy, and often discomfits the keenest sportsman, and his wily and sagacious dog; and this is the fact, that at one time you may pass by, and indeed within a few inches of a hidden bird, and the best dog in the world will not discover it—and perhaps within half an hour in repassing this spot your dog may discover and point the bird before he approaches within twenty feet. I have often pondered on this fact, but never could deduce reasons sufficiently good to insert here, or that would prove satisfactory—but of this, every experienced sportsman is aware, and he also knows, that he has encountered birds in an hour or two after he has flushed them, that completely baffled his pursuit at that time. It is an old saying, "that a bird in the hand is worth two in the bush"—and it is equally as true that a bird which you *know* to be in the bush is worth two yet to be hunted, and you should never leave a spot where you have scattered birds, until success no longer attends your pursuit. Show me a man who is traversing field after field in search of fresh coveys, and leaving the scattered birds behind, and I will tell you that he is no sportsman. The most important thing to a good shot, is to get the birds well scattered in ground favourable to shooting, and here pick them up one by one; nor does he leave the spot until he has flushed nearly, if not quite every bird—this is what may be styled clean hunting, and such an one will bag twofold more than him who is so slovenly in his hunting as only to flush a covey, kill his bird or two, and then seek others. The pleasure of a sportsman arises chiefly from the sagacity and faithfulness of his dog in hunting the scattered birds, for here depends his chief success. He also saves himself and dogs much unnecessary labour.

While beating ground for scattered birds, proceed at a very slow gait, and frequently pause, for this interruption to motion will sometimes cause a bird to spring, which otherwise would remain quiet until you passed by. Never strike a bush or cover with your gun, for I have known the wadding started from the shot, by a sudden blow, and

sometimes the gun discharged—avoid every thing likely to produce accident.

On entering tall cover with a companion, you cannot be too cautious of shooting each other; many a gentleman has to lament the loss of an eye, or some other injury, by the carelessness and indiscretion of his friend. If your companion is of an impetuous and heedless disposition, the sooner you drop his company the better, for you are certainly in danger from him, and in shooting in high cover, you have as many chances of being shot, as the bird, and this feeling so occupies your mind, that it unfits you to shoot. It is certainly advisable to hunt in company; but only choose one friend, and endeavour to modify your actions alike, especially the rate of walking, and then, when you are obscured from each other by thickets, there is less probability of one getting ahead of the other, and thus unconsciously rush into danger. When thus situated, and game before you, it is highly important to know each other's distance and direction—a low whistle, or a cough, will be heard sufficiently distant for this purpose, and it should be immediately responded to by your companion. Do not call violently to your dogs, nor talk, as in all probability there may be Pheasants near you, and a very trifling noise will make them take flight.

When a bird springs in cover of this kind, you will at first, no doubt, experience much difficulty in killing it, owing to the many objects which interpose between your sight and the game; but if you have founded your shooting on my early instructions of sighting, viz. "to fix your eyes intensely on the object to be shot at," these various objects will not affect you, and so long as an opening between the shrubbery presents itself through which you can see the game, and this having monopolized your attention, that you will find no more difficulty in killing your bird here, than in open ground, if your trigger obeys its impulse. Let me advise you particularly in this case, not to shoot too soon; this you may be induced to do in consequence of the apparent great distance of the bird from you, but this delusion is only occasioned by the multitude of things which, being between you and the game, have the tendency of throwing it in the distance, and should you have thrown one charge unsuccessfully at the bird, do not hesitate to try the second, and you will find the result will be more favourable—let the object be fairly on the wing, for the longer the angle of aim, the easier it will be to cover the bird.

It is a difficult thing to follow our game successfully in thickets or other woodland—the great velocity of the birds and density of the shrubbery make it perhaps as meritorious in destroying much game as any feats connected with the sporting world; this is placing art and science against nature, and nature, too, in the wildest and most rugged sense. There are perhaps no game birds on earth which fly with the same amazing rapidity as Partridges, Pheasants, and Grouse, when matured, and yet I have seen sportsmen who shot so well that two out of three of all the shots they made in ground covered with trees and underbrush, were about a fair proportion of what they killed. This under any circumstances is not bad shooting, but in cases like the above, it is superlatively good. It is not often however you can find a man competent to this task, and many gentlemen who have earned great reputation as first rate shots, on the shooting manors of Europe, have cut but odd figures in our forests, after American game.

I advise no young sportsman to relinquish a piece of ground from the prospective difficulties he has to encounter on it—if you enter the sporting world, you must take it rough, as well as even, and if success does not attend a single shot which you make in ground of the above cast, never mind, load and fire away, until you have shot all difficulty from before you. Conquer the rough places, and all others will be easy enough, and if after you have been practising in difficult places from time to time, you should now and then kill a bird, you will find the accomplishment of the same object in open ground not half so hard as at first. Before you return to your home, or even to the tavern, or carriage, discharge your gun of its contents. Let the many melancholy accidents so often occurring, be sufficient warning that no loaded gun should ever appear, except in the field;—you know not the consequences of your carelessness, after your gun may pass from under your notice; and the most certain method of feeling comfortable yourself, and preventing injury to others, is to shoot off your gun. Do not attempt to draw the load for the sake of saving the shot; the risk is ten thousand times greater than the value of the article you would secure. Many a man has sacrificed his future comfort at the shrine of avarice. I.

RAIL SHOOTING.

Of all the seasons for shooting, none are hailed with a more hearty welcome by the gunners of the city and county of Philadelphia, than that for shooting Rail. About the first of September this campaign opens, and although these birds are but little else than skin and bones, yet such is the impatience of some shooters, that the war of extermination is carried on without intermission from that period until their final departure from our rivers. They are not found in great numbers, however, until toward the latter

end of September, at which time they may for the first be accounted fit for the table. From the 20th of September to the 10th of October is the season of the greatest plenitude and fatness, and is therefore considered the proper period for shooting, and the havoc made during the lapse of these few weeks amongst these feathered visitants, is astounding and almost incredible.

To those who are unacquainted with the bird, (as is the case almost wholly to the north,) the quantity killed during the shooting season, would seem entirely fabulous; but those who are accustomed to shooting them, will rate the quantity enumerated below as moderate. The writer had the curiosity, a few years since, to take the aggregate of some shooters on several successive days at one of the favourite places of resort near the city; and as these days were considered at the time a fair average for the season, it was computed that not less than 24,000 Rail were slaughtered in twenty days, by the gunners which came to this place. Although this is considered the most public place of resort at this season, still there are several others, to which numbers of persons concentrate, and should I say that one hundred thousand Rail are killed and brought to Philadelphia during the short lapse of one month, it would be within bounds.

This sport is followed, not altogether for the value of the birds, but the amusement it affords, and the little labour required on the part of the shooter. The Rail shooter enjoys a satisfaction peculiar to this sport, which is not likened to shooting of any other description—it is unattended with fatigue, and was it not for the heat of the sun to which you sometimes become exposed, it would be for the time it lasts, one of the most agreeable pastimes known. The shooter mounts his buggy, drives a few miles, enters his boat, and is rowed gently along the margin of the reeds until the tide is sufficiently high to bear the batteau over the flats, when he stations himself in the forepart of the boat, and shoots as the disturbed Rail rises to escape—he has no other work than to load his gun, and discharge it again at the flying birds, and it is not even necessary for him to mark where they have fallen, or attempt to pick them up. All of this requires so little labour and exposure to dirt, that a change of clothing is scarcely necessary; and, indeed, the suit usually worn by experienced shooters, is spotless white. It is not so, however, with the men who push you over the flats; on them all the fatigue rests; and it is work of the hardest kind, but the compensation is equivalent for all the labour, during so short a period, and these men enter into the spirit of the work with the utmost cheerfulness, and are exceedingly ambitious to excel their competitors, not only in speed, but in the number of birds slain—it is therefore all important to their interests to serve those shooters who can kill nearly every bird which is shot at, as well as be expert in loading. The labour of the pusher consists chiefly in directing the boat through the reeds by means of a long pole. With this instrument, (which is usually about twelve to fifteen feet in length) he stations himself in the hinder part of the boat, and applying the pole to the mud, he drives along at a steady, sometimes a rapid rate; his duty is to push through the thickest reeds, and keep constantly in motion, and whenever a bird rises, to give the signal to the shooter, by saying "mark," and when the bird falls, to mark the spot and push up in order to recover the shot bird; and it is really astonishing with how much precision this is done, which to an inexperienced eye would be lost, and perhaps not one-half the birds recovered, when some of the best pushers collect on an average ninety-five out of every hundred birds killed. The merit of the pushers consists chiefly in the three following items, viz. judgment as to the ground, strength and nerve to keep the boat in motion, and success in recovering the shot birds—according as a man possesses these, so is he esteemed, and a good pusher has engagements nearly always a week or ten days in advance.

It is a difficult matter for an inferior shot to secure the services of a first rate pusher; they hate to labour in vain, although paid as much by a bad as a good shot; yet, as they say, "their duty is hard, and to be pushing hour after hour after live birds is dull work," they work hard, and are anxious to show something for their labours, and avoid that teasing and low criticism directed against them by their more fortunate fellow pushers, whenever they return unsuccessful.

There is no spot in this country where this amusement is followed to so great extent as on the Delaware river, and it is really an interesting sight, while passing up and down the river in steam boats, to let the eye wander over the almost endless flats of reeds, which line both sides of this river, and see multitudes of boats as far as vision can avail, each armed and braving the density of the reeds, like a miniature fleet, ready for action, while the sharp cracking of the more neighbouring guns are constantly assailing the ear, and then those more distant, scarcely audible, until again sound can no longer be heard, and the small volume of smoke, like the puff of a segar, tells the work of destruction is going on.

So rapid is the firing necessary, during the short interval allotted to this purpose, that the gun oftentimes becomes so heated, as not only to render it insupportable to the hand, but dangerous; and it is quite a common occurrence for a shooter to kill, in a couple of hours, as many as an hundred to an hundred and fifty birds, and some-

times a score beyond that number, and these too, shot singly and on the wing.

These birds are sometimes in such numbers, especially when a high tide uncovers them, that you may see some running rapidly before the boat, others looking at you and wagging their tails, and frequently within a few feet of the boat, while the more timid are endeavouring to escape by their awkward and ludicrous flight.

The feat of shooting Rail on the wing may be performed by the most inexperienced shot who can sight a gun at all, and the opportunities of exercising the skill of these tyros are embraced with much eagerness, as the fact of seeing a bird fall before the shot of such, excites them to much perseverance, and gives them occasion to boast of their abilities for the balance of the year. The flight of the Rail is so regular and slow, that a good shot may kill fifty birds without scarcely or ever missing a shot—this has often been done.

There is no kind of shooting which draws in its train such a variety of gunners as this sport. At the great places of resort, may be seen characters of all kinds; from the most motley group of horrid looking ragamuffins that would disgrace even a work-house tread-mill, to gentlemen of wealth and fashion, carried thither in their most splendid equipages—the former, who, unable to incur the expense of boats, wander along the shores and wade waist deep in mud and water, to secure a few birds, whose value would not be equal to one-fourth of what a day's industry would obtain at honourable employment—but idleness and intemperance must have their votaries, and no occasion offers better inducement to such than the season of Rail shooting.

The preparations made by Rail shooters differ much;—the experienced have their charges made into cartridges, so as to afford facility in loading, as on this greatly depends success as to numbers; while others have their materials in an open box in front of them, at the bow of the boat. Some are supplied with a requisite quantity of powder, and not over eight or ten pounds of shot; and again, others fearful of falling short, will not take less than a whole bag (25 lbs.) for one tide; the former is generally successful in obtaining a large quantity of birds, while the latter not unfrequently have to put up with less than a dozen.

It is always necessary to take a cold collation in the boat, as appetite is much awakened by the strengthening breezes on the water, and the exercise occasioned by shooting; of this the pusher always shares, and unless there should also be signs of something stimulating in the character of brandy, you are not very favourably regarded by these pushers on other occasions.

There is not perhaps in all the feathered tribe, an individual so difficult to arouse from its cover as the Rail; no noise, labour, or violence, will make this bird take wing, when a sufficiency of covering enables it to employ its wiles in eluding pursuit—and even when driven by the approach of a boat, on the rise of the tide from one spot by flight to another, you stand a better chance of starting a dozen fresh birds than this one again—and when shot, unless immediately killed, or its energies destroyed so as to prevent it from diving, it is seldom worth your while to seek it, as the time spent in fruitless search would perhaps be sufficient to get half a score of other birds. Owing to the difficult manner in which this bird takes wing, its short and laborious flight, the power of diving and remaining under water for a long time, and at times its very sudden disappearance from our shores, many persons erroneously suppose that they remain with us the whole winter, and as they cannot find their hiding places, take it for granted they lie buried in the mud. The absurdity of this opinion I shall not attempt to show, but will refer the reader to the history of the Rail, page 206, Vol. I. of the "Cabinet of Natural History," where the folly of this doctrine is fully treated, and a more particular account given of this singular bird.

Rail shooting is condemned by many, as unworthy of the notice or skill of sportsmen, as not ranking among game, or requiring science to shoot them; but, as it occurs only during that season when game cannot be shot, without violating the law and rules of sporting, it is sought by many who are good sportsmen, as a prelude to the shooting season, and to satisfy in a measure an appetite, which a long interval of idleness creates; it is a fascinating amusement, and he who goes once, if at all successful, will scarcely be able to refrain from going a second or third time. Nos. 9 and 10 shot should be used for shooting these birds, which, on trial, will be found not only sufficiently large to kill the bird at a clever distance, but not to do injury when necessity compels the shooter to kill his bird close at hand, as is too often the case.

The Rail shooter is often rewarded with better kind of game. Ducks, teal, plover, and frequently snipe are met with and killed, and it is no uncommon circumstance for some individuals to carry duck guns, by which means a few of these birds are added to the list.

Rail sell well in market, although such numbers are killed, as most families desire a taste of this popular bird, and was it not for their thick skins, and the intolerable difficulty of divesting them of feathers, they would be regarded as equal to any bird of game. These circumstances make many good housewives flinch from the task of preparing them for the table; and when any thing grows unpopular with the ladies, it is "nullified" at once. D.

GREY FOX.

GRAY FOX.

CANIS CINEREO-ARGENTATUS.

[Plate XIII. Vol. 2.]

Renard Gris: Briss. *quad. p.* 41.—*Agourachay:* Azara, *quad due Paraguay*, i. *p.* 317. *Canis Cenereo argentatus.* Gmel. Sabine, *Zool. app. p.* 657. Godman, vol. i. p. 280.—*Fulvous-necked Fox.* Shaw, *Zool. Miscel.*

The Gray Fox is an inhabitant of all parts of the United States, from Louisiana to Canada, and as far west as the Rocky Mountains—its chief abode, however, is about human habitations, where it is more destructive than the other species. They are more numerous in the Southern States, more particularly Virginia, and form the chief source of amusement to the sportsmen of that state.

The Gray differs from the Red Fox in many particulars, although some writers make it only a variety of the latter, and indeed confound the whole race together, attributing the difference only to changes of climate and circumstances. The Gray Fox is different in colour and in many of its habits, and possesses more cunning and less disposition to wander than the Red Fox. The latter is more active and savage in its disposition, and although exceedingly carnivorous, is not so destructive to domestic animals as the Gray Fox, and emits an odour extremely offensive, which does not belong to the latter.

The Fox appears to be spread over the whole earth, and is known by most of the inhabitants of every country, and in every country differs in colour, varying as Gray, Brown, Red, Blue, Black, Silver, and in the severe climes of the arctic regions, purely white. He is one of those animals of which we have the earliest notice in sacred writ; his cunning is proverbial, and his wiles have earned for him a reputation, which would imply more than mere instinct. A writer remarks, that "in Japan, where the Fox is very common, the natives believe him to be animated with the devil; and their histories and sacred writings are filled with strange accounts respecting him." It is not, however, necessary to have recourse to heathenish traditions respecting the artfulness of this common enemy; we have him at our very doors, and his frequent depredations are convincing enough, that he possesses more than ordinary share of sagacity and mischief. He indeed appears to dwell in enmity with all animals, and unhesitatingly makes war against them, who, in return, hold him as an outlaw, and show no mercy where mercy is not to be found. Man pursues him with untiring perseverance unto death; the dog, his most formidable foe, hunts him with savage acrimony, and yelling without intermission, the death-notes of revenge. The wolf is as destructive, but a more necessitous enemy than the dog. The eagle, the crow, the jay, and many smaller birds, attend him as their mortal enemy, with signals of hatred and revenge. He appears to be an isolated being, and did he not possess that energy and cunning which nature has so bountifully given him, his race would have long since been annihilated.

The Fox is not only very voracious, but also most unmerciful in his destructive habits, and there is scarcely a living creature that he encounters, and is able to master, but he will destroy. No domestic fowl can escape his pursuit; young rabbits are his chief delight; he will draw the old ones from their seats, and pheasants and partridges from their nests, and devour them; geese, ducks, and all species of winged game, fall beneath his voracity; and when such food fails him, he will destroy rats, mice, snakes, frogs, lizzards, and insects: he is an expert fisher, and where these abound, he never fails to get a plentiful supply of food.

Of all animals, none seem so well adapted for the sporting world as the Fox, and, as the subject of our present notice possesses a larger share of cunning than the other species, he seems to be pursued by hunters in preference. The very craftiness of his nature fits him well for the ingenious and persecuting spirit of man.

The Fox prepares a den or burrow under ground, mostly beside a bank, or hill, to which he retreats in case of danger or necessity, but is very fond of reposing above ground, and basking in the sun. It is said they continue to grow for eighteen months, and will live in freedom fourteen or fifteen years, but pine away and die in a much shorter period if in a state of confinement. The following description of the Gray Fox, is from Godman's Natural History. "The length of the head and body is about twenty-four, and of the tail fifteen inches. The general colour of the animal is grizzly, becoming gradually darker from the fore shoulders, to the posterior parts of the back, produced by the intermixture of fulvous hairs with those constituting the mass of the pelage, which are thus coloured; near the body the hair is rather plumbeous, then yellowish, then white, and then uniformly tipped with lustrous black. The front, from the top of the head to the edge of the orbits is gray, while the rest of the face, from the internal angle of the eye to within half an inch of the extremity of the snout, is blackish; at the extremity on each side of the granalated black tip of the nose it is of a yellowish white. A fine line of black tipped hairs extends upwards and outwards, from half an inch

below the internal angle of the eyes, until it is intersected by a similar black line about half an inch beyond the external angle of the eye, thus forming a very acute triangle, whose basis is on the side of the face. This blackish gray triangle, joined to the peculiar sharpness of the face, and the line produced by the black whiskers on the sides of the nose, singularly increase the appearance of slyness and cunning expressed in the physiognomy of this animal. The face below this triangle is white, and the latter colour is continued semicircularly upon the upper part of the throat. The under jaw is blackish, this colour extending along the line of the mouth, and passing about half an inch beyond the junction of the lips at the angle. The inner surface of the ears is clothed with short light yellowish hair; their lips on the outside are blackish gray. And the whole of their posterior surface is yellow, which colour descends, encircling the neck, and is the only colour on the anterior parts with the exception of a white spot on the breast. The inferior parts of the body are white, tinted slightly in some individuals with faint reddish brown. The tail is thick and bushy, and the fur on the upper side is pale yellow, slightly tipped with black; the under part is rust coloured; and the end entirely black."

DISPERSION OF SEEDS OVER THE EARTH.

The principal of the inanimate agents, provided by nature for scattering the seeds of plants over the globe, are the movements of the atmosphere and of the ocean, and the constant flow of water from the mountains to the sea. To begin with the winds: a great number of seeds are furnished with downy and feathery appendages, enabling them, when ripe, to float in the air, and to be wafted easily to great distances by the most gentle breeze. Other plants are fitted for dispersion by means of an attached wing, as in the case of the fir-tree, so that they are caught up by the wind as they fall from the cone, and are carried to a distance. Amongst the comparatively small number of plants known to Linnæus, no less than one hundred and thirty-eight genera are enumerated as having winged seeds.

As winds often prevail for days, weeks, or even months together, in the same direction, these means of transportation may sometimes be without limits; and even the heavier grains may be borne through considerable spaces, in a very short time, during ordinary tempests; for strong gales, which can sweep along grains of sand, often move at the rate of about forty miles an hour, and if the storm be very violent, at the rate of fifty-six miles. The hurricanes of tropical regions, which root up trees and throw down buildings, sweep along at the rate of ninety miles an hour, so that, for however short a time they prevail, they may carry even the heavier fruits and seeds over friths and seas of considerable width, and, doubtless, are often the means of introducing into islands the vegetation of adjoining continents. Whirlwinds are also instrumental in bearing along heavy vegetable substances to considerable distances. Slight ones may frequently be observed in our fields, in summer, carrying up haycocks into the air, and then letting fall small tufts of hay far and wide over the country; but they are sometimes so powerful as to dry up lakes and ponds, and to break off the boughs of trees, and carry them up in a whirling column of air.

Franklin tells us, in one of his letters, that he saw, in Maryland, a whirlwind which began by taking up the dust which lay in the road, in the form of a sugar-loaf with the pointed end downwards, and soon after grew to the height of forty or fifty feet, being twenty or thirty in diameter. It advanced in a direction contrary to the wind, and although the rotatory motion of the column was surprisingly rapid, its onward progress was sufficiently slow to allow a man to keep pace with it on foot. Franklin followed it on horseback, accompanied by his son, for three-quarters of a mile, and saw it enter a wood, where it twisted and turned round large trees with surprising force. These were carried up in a spiral line, and were seen flying in the air, together with boughs and innumerable leaves, which, from their height, appeared reduced to the apparent size of flies. As this cause operates at different intervals of time throughout a great portion of the earth's surface, it may be the means of bearing not only plants but insects, land-testacea and their eggs, with many other species of animals, to points which they could never otherwise have reached, and from which they may then begin to propagate themselves again as from a new centre.

The seeds of some aquatic fresh-water plants are of the form of shells, or small canoes, and on this account they swim on the surface, and are carried along by the wind and stream. Others are furnished with fibres, which serve the purpose of masts and sails, so that they are impelled along by the winds, even where there is no current. They cannot take root until the water stagnates, or till they reach some sheltered corner, where they may live without being exposed to too much agitation from winds and currents. The above-mentioned contrivances may enable aquatic plants to diffuse themselves gradually to considerable distances wherever there is a great chain of lakes, or a river which traverses a large continent. It has been found that a great numerical proportion of the exceptions

to the limitation of species to certain quarters of the globe, occur in the various tribes of cryptogamic plants. Linnæus observed, that as the germs of plants of this class, such as mosses, fungi, and lichens, consist of an impalpable powder, the particles of which are scarcely visible to the naked eye, there is no difficulty to account for their being dispersed throughout the atmosphere, and carried to every point of the globe, where there is a station fitted for them. Lichens in particular ascend to great elevations, sometimes growing two thousand feet above the line of perpetual snow, at the utmost limits of vegetation, and where the mean temperature is nearly at the freezing point. This elevated position must contribute greatly to facilitate the dispersion of those buoyant particles of which their fructification consists.

Some have inferred, from the springing up of mushrooms whenever particular soils and decomposed organic matter are mixed together, that the production of fungi is accidental, and not analogous to that of perfect plants. But Fries, whose authority on these questions is entitled to the highest respect, has shown the fallacy of this argument in favour of the old doctrine of equivocal generation. "The sporules of fungi," says this naturalist, "are so infinite, that in a single individual of Reticularia maxima, I have counted above ten millions, and so subtile as to be scarcely visible, often resembling thin smoke; so light that they may be raised perhaps by evaporation into the atmosphere, and dispersed in so many ways by the attraction of the sun, by insects, wind, elasticity, adhesion, &c., that it is difficult to conceive a place from which they may be excluded."

In turning our attention, in the next place, to the instrumentality of the aqueous agents of dispersion, we cannot do better than cite the words of one of our ablest botanical writers. "The mountain-stream or torrent," observes Keith, "washes down to the valley the seeds which may accidentally fall into it, or which it may happen to sweep from its banks when it suddenly overflows them. The broad and majestic river, winding along the extensive plain, and traversing the continents of the world, conveys to the distance of many hundreds of miles the seeds that may have vegetated at its source. Thus the southern shores of the Baltic are visited by seeds which grew in the interior of Germany; and the western shores of the Atlantic by seeds that have been generated in the interior of America." Fruits, moreover, indigenous to America and the West-Indies, such as that of the Mimosa scandens, the cashew-nut, and others, have been known to be drifted across the Atlantic by the Gulf-stream, on the western coasts of Europe, in such a state that they might have vegetated had the climate and soil been favourable.

Among these the Guilandina Bonduc, a leguminous plant, is particularly mentioned, as having been raised from a seed found on the west coast of Ireland. Sir Hans Sloane informs us that the lenticula marina, or sargasso, a bean which is frequently cast ashore on the Orkney isles, and coast of Ireland, grows on the rocks about Jamaica, where the surface of the sea is sometimes strewed with it, and from whence it is known to be carried by the winds and currents towards the coast of Florida.

The absence of liquid matter in the composition of seeds renders them comparatively insensible to heat and cold, so that they may be carried, without detriment, through climates where the plants themselves would instantly perish. Such is their power of resisting the effects of heat, that Spallanzani mentions some seeds that germinated after having been boiled in water. When, therefore, a strong gale, after blowing violently off the land for a time, dies away, and the seeds alight upon the surface of the waters, or wherever the ocean, by eating away the sea-cliffs, throws down into its waves plants which would never otherwise approach the shores, the tides and currents become active instruments in assisting the dissemination of almost all classes of the vegetable kingdom.

In a collection of six hundred plants from the neighbourhood of the river Zaire, in Africa, Mr. Brown found that thirteen species were also met with on the opposite shores of Guiana and Brazil. He remarked, that most of these plants were only found on the lower parts of the river Zaire, and were chiefly such as produced seeds capable of retaining their vitality a long time in the currents of the ocean.

Islands, moreover, and even the smallest rocks, play an important part in aiding such migrations, for when seeds alight upon them from the atmosphere, or are thrown up by the surf, they often vegetate and supply the winds and waves with a repetition of new and uninjured crops of fruits and seeds, which may afterwards pursue their course through the atmosphere, or along the surface of the sea, in the same direction. The number of plants found at any given time on an islet affords no test whatever of the extent to which it may have co-operated towards this end, since a variety of species may first thrive there and then perish, and be followed by other chance-comers like themselves.

Currents and winds, in the arctic regions, drift along icebergs covered with an alluvial soil on which herbs and pine saplings are seen growing, which often continue to vegetate on some distant shore where the ice-island is stranded.

With respect to marine vegetation, the seeds being in their native element, may remain immersed in water

without injury for indefinite periods, so that there is no difficulty in conceiving the diffusion of species wherever uncongenial climates, contrary currents, and other causes, do not interfere. All are familiar with the sight of the floating sea-weed

"Flung from the rock on ocean's foam to sail,
Where'er the surge may sweep, the tempest's breath prevail."

Remarkable accumulations of drift weed occur on each side of the equator in the Atlantic, Pacific, and Indian Oceans. Columbus and other navigators who first encountered these banks of algæ in the Northern Atlantic, compared them to vast inundated meadows, and state that they retarded the progress of their vessels. The most extensive bank is a little west of the meridian of Fayal, one of the Azores, between latitude 25° and 36°; violent north winds sometimes prevail in this space, and drive the sea-weed to low latitudes, as far as the 24th or even the 20th degree.

The hollow pod-like receptacles in which the seeds of many algæ are lodged, and the filaments attached to the seed-vessels of others, seem intended to give buoyancy, and we may observe that these hydrophytes are in general *proliferous*, so that the smallest fragment of a branch can be developed into a perfect plant. The seeds, moreover, of the greater number of species are enveloped with a mucous matter like that which surrounds the eggs of some fish, and which not only protects them from injury, but serves to attach them to floating bodies or to rocks.

But we have as yet considered part only of the fertile resources of nature for conveying seeds to a distance from their place of growth. The various tribes of animals are busily engaged in furthering an object whence they derive such important advantages. Sometimes an express provision is found in the structure of seeds to enable them to adhere firmly by prickles, hooks, and hairs, to the coats of animals, or feathers of the winged tribe, to which they remain attached for weeks, or even months, and are borne along into every region whither birds or quadrupeds may migrate. Linnæus enumerates fifty genera of plants, and the number now known to botanists is much greater, which are armed by hooks, by which, when ripe, they adhere to the coats of animals. Most of these vegetables, he remarks, require a soil enriched with dung. Few have failed to mark the locks of wool hanging on the thorn-bushes, wherever the sheep pass, and it is probable that the wolf or lion never give chace to herbivorous animals without being unconsciously subservient to this part of the vegetable economy.

A deer has strayed from the herd, when browsing on some rich pasture, when he is suddenly alarmed by the approach of his foe. He instantly plunges through many a thicket, and swims through many a river and lake. The seeds of the herbs and shrubs adhere to his smoking flanks, and are washed off again by the streams. The thorny spray is torn off and fixes itself in his hairy coat, until brushed off again in other thickets and copses. Even on the spot where the victim is devoured, many of the seeds which he had swallowed immediately before the pursuit may be left on the ground uninjured.

The passage, indeed, of undigested seeds through the stomachs of animals is one of the most efficient causes of the dissemination of plants, and is of all others, perhaps, the most likely to be overlooked. Few are ignorant that a portion of the oats eaten by a horse preserve their germinating faculty in the dung. The fact of their being still nutritious is not lost on the sagacious rook. To many, says Linnæus, it seems extraordinary, and something of a prodigy, that when a field is well tilled and sown with the best wheat, it frequently produces darnel or the wild oat, especially if it be manured with new dung: they do not consider that the fertility of the smaller seeds is not destroyed in the ventricles of animals.

Some of the order of the Passeres, says Ekmarck, devour the seeds of plants in great quantities, which they eject again in very distant places, without destroying its faculty of vegetation; thus a flight of larks will fill the cleanest field with a great quantity of various kinds of plants, as the melilot trefoil (*Medicago lupulina,*) and others whose seeds are so heavy that the wind is not able to scatter them to any distance. In like manner, the blackbird and missel-thrush, when they devour berries in too great quantities, are known to consign them to the earth undigested in their excrement.

Pulpy fruits serve quadrupeds and birds as food, while their seeds, often hard and indigestible, pass uninjured through the intestines, and are deposited far from their original place of growth in a condition peculiarly fit for vegetation. So well are our farmers, in some parts of England, aware of this fact, that when they desire to raise a quick-set hedge in the shortest possible time, they feed turkeys with the haws of the common white-thorn (*Crataegus oxyacantha,*) and then sow the stones which are ejected in their excrement, whereby they gain an entire year in the growth of the plant. Birds, when they pluck cherries, sloes, and haws, fly away with them to some convenient place, and when they have devoured the fruit, drop the stone into the ground. Captain Cook, in his account of the volcanic island of Tanna, one of the New Hebrides, which he visited in his second voyage, makes the following interesting observation. "Mr. Foster, in

his botanical excursion this day, shot a pigeon, in the craw of which was a wild nutmeg. He took some pains to find the tree on this island, but his endeavours were without success." It is easy, therefore, to perceive, that birds in their migrations to great distances, and even across seas, may transport seeds to new isles and continents.

The sudden deaths to which great numbers of frugivorous birds are annually exposed, must not be omitted as auxiliary to the transportation of seeds to new habitations. When the sea retires from the shore, and leaves fruits and seeds on the beach, or in the mud of estuaries, it might, by the returning tide, wash them away again, or destroy them by long immersion; but when they are gathered by land birds which frequent the sea-side, or by waders and water-fowl, they are often borne inland, and if the bird to whose crop they have been consigned is killed, they may be left to grow up far from the sea. Let such an accident happen but once in a century, or a thousand years, it will be sufficient to spread many of the plants from one continent to another; for, in estimating the activity of these causes, we must not consider whether they act slowly in relation to the period of our observation, but in reference to the duration of species in general.

Let us trace the operation of this cause in connexion with others. A tempestuous wind bears the seeds of a plant many miles through the air, and then delivers them to the ocean; the oceanic current drifts them to a distant continent; by the fall of the tide they become the food of numerous birds, and one of these is seized by a hawk or eagle, which, soaring across hill and dale to a place of retreat, leaves, after devouring its prey, the unpalatable seeds to spring up and flourish in a new soil.

The machinery before adverted to is so capable of disseminating seeds over almost unbounded spaces, that were we more intimately acquainted with the economy of nature, we might probably explain all the instances which occur of the aberration of plants to great distances from their native countries.—*Lyell's Geology.*

AMERICAN PINE TREES.

There appears to be fourteen species of Pine found in the extensive forests of North America. The most valuable of these are, the "Long-leaved Pine" (*Pinus Australis,*) from which the turpentine and tar of America are principally produced; the "White Pine," much used in ship-building; the "Hemlock Spruce" (*Abies Canadensis,*) the timber of which is not good, but which affords bark nearly as excellent for tanning as that of the oak; and the "American Silver Fir" (*Abies balsamifera,*) from which is procured the resinous substance known as Canada balsam.

The principal exportation of deals from America not only to Europe, but to the West Indies, is of the timber of the White Pine. Extensive as are the woods of the United States, this species of timber has been almost entirely consumed in the thickly-peopled districts; so that those who are engaged in the business of cutting down the trees have to pass the greater part of their time in remote forests, where the White Pine is still found. United in small bands, they penetrate into the woods in the depth of winter, having previously in the summer visited the same places to prepare a stock of hay for their oxen. They build themselves huts, roofed with bark; and though the ground is covered five or six feet deep with snow, and the mercury in the thermometer is sometimes eighteen or twenty degrees below the freezing point, they apply themselves with the utmost courage and perseverance to felling the trees. Cutting them into logs about eighteen feet long, they convey them, in the district of Maine, by means of their oxen, which are admirably trained, to the bank of the Kennebeck river, where they roll them upon the ice. Before the spring, when the frost breaks up, many thousands of these logs are thus collected. They are then carried down the current to Wenslow, about one hundred miles from the sea, at which place, the logs being previously marked, the owners are enabled to select the produce of their respective labours. The timber is here sold to the proprietors of numerous saw-mills established on the Kennebeck, between Wenslow and the coast; and from this point comes most of the American white deal which is shipped to foreign parts.

The "lumberers" of New Brunswick, and those who cut down the timber of the woods of the United States, select the firs of proper girth and quality with especial care. It is stated, that not one tree in ten thousand is fit for purposes of commerce. These thinnings, therefore, of the woods of North America do not produce the destruction of timber which now forms a subject of complaint in that country of forest-trees. The indiscriminate clearings of the agricultural settlers, and the conflagrations which occasionally take place, are the causes, which, in a few centuries, may render North America no longer an exporting country for timber. Sometimes the forests are injudiciously set on fire by the settlers, to save the labour of cutting and partially burning; but by such indiscriminate conflagration, the land is not properly cleared, and a very strong and noxious plant, called the fire-weed, instantly springs up, exhausting all the fertility of the

ground. Sometimes these conflagrations extend over the whole face of the country, producing the most fearful destruction of life and property. The spectacle of a burning forest, according to the accounts of those who have witnessed it, is most sublime. The flames leap from tree to tree, and rushing up to their tops, throw out immense volumes of fire from the thick clouds of smoke that hang over the burning mass, while the falling trees come down with the most tremendous crash.

In October, 1825, upwards of a hundred miles of the country, on the north side of Miramichi river, became a scene of the most dreadful conflagration that has perhaps ever occurred in the history of the world. In Europe, we can scarcely form a conception of the fury and rapidity with which the fires rage through the American forests during a dry hot season; at which time the underwood, decayed vegetable substances, fallen branches, bark, and withered trees, are as inflammable as a total absence of moisture can render them. When these tremendous fires are once in motion, or at least when the flames extend a few miles of the forest, the surrounding air becomes highly rarefied, and the wind naturally increases to a hurricane. It appears that the woods had been, on both sides of the north-west branch, partially on fire for some time, but not to an alarming extent, until the 7th of October, when it came on to blow furiously from the north-west, and the inhabitants on the banks of the river were suddenly alarmed by a tremendous roaring in the woods, resembling the incessant rolling of thunder; while, at the same time, the atmosphere became thickly darkened with smoke. They had scarcely time to ascertain the cause of this phenomenon, before all the surrounding woods appeared in one vast blaze, the flames ascending more than a hundred feet above the tops of the loftiest trees, and the fire, like a gulph in flames, rolling forward with inconceivable celerity. In less than an hour, Douglastown and Newcastle were enveloped in one vast blaze, and many of the wretched inhabitants, unable to escape, perished in the midst of this terrible fire.

A Miramichi paper, published on the 11th of October, at the scene of this fearful conflagration, contains some interesting particulars, from which it appears that several hundred lives were lost in Newcastle, Douglastown, and Fredericton; that nearly all the "lumberers" in the woods perished; that in many parts of the country the cattle were all destroyed; and that the loss of property in the towns was immense, as the fire rushed upon the inhabitants with such inconceivable rapidity, that the preservation of their lives could be their only care.

Two new species of Pine, of more gigantic dimensions than any that have hitherto been described in Europe or America, have been found by Dr. David Douglas, a most enterprising botanist, who was sent out by the Horticultural Society of London in 1825, to explore the west coast of North America. He returned from that country in the autumn of 1827, bringing with him a rich addition to the known catalogue of plants. These Pines are:—

1. *Pinus Douglasii.*—This Pine grows to the height of two hundred and thirty feet, and is upwards of fifty feet circumference at the base. It has a rough corky bark, from an inch to twelve inches thick. The leaves resemble those of the spruce, and the cones are small. The timber is of good quality and very heavy. This Pine was found by Mr. Douglas on the banks of the Columbia, where it forms extensive forests, extending from the shores of the Pacific to the Stony Mountains.

2. *Pinus Lambertiana.*—This species of Pine was discovered in Northern California, where it is dispersed over large tracts of country, but does not form dense forests like most of the other Pines. It is a very majestic tree; and one specimen, which, in consequence of its having been blown down, Mr. Douglas was enabled to measure, was two hundred and fifteen feet in length, fifty-seven feet nine inches in circumference at three feet from the root, and seventeen feet five inches at one hundred and thirty-four feet. It is probably the largest single mass of timber that ever was measured by man, though some of the growing specimens of the same Pine were evidently of greater elevation. The trunk of the *Lambertiana* is straight, and clear of branches for about two-thirds of the height. The bark is uncommonly smooth, and the whole tree has a most graceful appearance. The cones resemble those of the Weymouth Pine, but are much larger, being on an average at least sixteen inches in length. The seeds are eaten roasted, or pounded into cakes. The tree bears a considerable resemblance to the spruces; and, as is the case with them, its turpentine is of a pure amber colour, and the timber soft, white, and light. One singular property of this tree is, that when the timber is partly burned, the turpentine loses its peculiar flavour, and acquires a sweetish taste. It is used by the natives as a substitute for sugar.—*Lib. Ent. Know.*

THE CHAMOIS.

The Chamois is a wild animal, but easily tamed, and very docile. It is about the size of a domestic goat, and resembles one in many respects. It is most agreeably lively, and active beyond expression. Its hair is short, like that of the doe; in spring it is of an ash colour,

and in winter of a blackish brown. The large males keep themselves apart from the rest, except in their rutting time. The time of their coupling is from the beginning of October to the end of November; and they bring forth in April and March. The young follows the dam for about five months, and sometimes longer, if the hunters, or the wolves, do not separate them. It is asserted that they live between twenty and thirty years. The flesh of the Chamois is good to eat; and some of the fattest afford ten or twelve pounds of suet, which far surpasses that of the goat in solidity and goodness.

The cry of the Chamois is not distinctly known; if it has any, it is but faint, and resembling that of a hoarse goat; it is by this cry it calls its young; but, when they are frightened, or are in danger of any enemy, or some other object not perfectly known to them, they warn the rest of the flock by a kind of hissing noise. It is observable, that the Chamois has a very penetrating eye, and its hearing and smell are not less distinguishing. When it finds an enemy near, it stops for a moment, and then in an instant flies off with the utmost speed. When the wind is in its favour, it can smell a human creature for more than half a mile distance. When this happens, therefore, and it cannot see its enemy, but only discovers his approach by the scent, it begins the hissing noise with such force, that the rocks and the forests re-echo with the sound. This hissing continues as long as the breath will permit. In the beginning it is very shrill, and deeper towards the close. This animal then rests a moment, after this alarm, to inspect farther into its danger: and, having confirmed the reality of its suspicion, it commences to hiss by intervals, till it has spread the alarm to a great distance. During this time, it is in the most violent agitation, strikes the ground forcibly with its fore foot, and sometimes with both; it bounds from rock to rock; it turns, and looks round; it turns to the edge of the precipice, and when it has obtained a sight of the enemy, flies from it with all its speed. The hissing of the male is much more acute than that of the female; it is performed through the nostrils, and is, properly, no more than a very strong breath, forced through the nostrils by fixing the tongue to the palate, keeping the teeth nearly shut, the lips open, and a little lengthened. Their agility is wonderful, as they will throw themselves down, across a rock, which is nearly perpendicular, and twenty or thirty feet in height, without a single prop to support their feet. Their motion has, indeed, rather the appearance of flying than of leaping. The Chamois feeds upon the best herbage, and chooses the most delicate parts of plants, flowers, and the most tender buds. It is not less delicate with regard to several aromatic herbs, which grow upon the sides of the Alps. It drinks but very little, while it feeds upon the succulent herbage, and ruminates, like the goat, in the intervals of feeding. Its head is crowned with two small horns, of about half a foot long, of a beautiful black, and rising from the forehead, almost betwixt the eyes. These horns are often made use of for the heads of canes. The hides of these animals are very strong and supple, and good warm waistcoats and gloves are made of them.

The hunting of the Chamois is very laborious, and extremely difficult and perilous. It is thus admirably described by Saussure:—"The Chamois hunter sets out upon his expedition of fatigue and danger generally in the night. His object is to find himself at the break of day in the most elevated pastures, where the Chamois comes to feed before the flocks shall have arrived there. The Chamois feeds only at morning and evening. When the hunter has nearly reached the spot where he expects to find his prey, he reconnoitres with a telescope. If he finds not the Chamois, he mounts still higher; but if he discovers him, he endeavours to climb above him and to get nearer, by passing round some ravine, or gliding behind some eminence or rock. When he is near enough to distinguish the horns of the animal (which are small, round, pointed, and bent backward like a hook,) he rests his rifle upon a rock, and takes his aim with great coolness. He rarely misses. This rifle is often double-barrelled. If the Chamois falls, the hunter runs to his prey—makes sure of him by cutting the hamstrings—and applies himself to consider by what way he may best regain his village. If the route is very difficult, he contents himself with skinning the Chamois; but if the way is at all practicable with a load, he throws the animal over his shoulder, and bears it home to his family, undaunted by the distance he has to go, and the precipices he has to cross.

"But when, as is more frequently the case, the vigilant animal perceives the hunter, he flies with the greatest swiftness into the glaziers, leaping with incredible speed over the frozen snows and pointed rocks. It is particularly difficult to approach the Chamois when there are many together. The sentinel, who is placed on the point of some rock which commands all the avenues of their pasturage, makes the sharp hissing sound already mentioned, at the sound of which all the rest run towards him, to judge for themselves of the nature of the danger. If they discover a beast of prey or a hunter, the most experienced puts himself at their head; and they bound along, one after the other, into the most inaccessible places.

"It is then that the labours of the hunter commence; for then, carried away by the excitement, he knows no danger. He crosses the snows, without thinking of the

abysses which they may cover; he plunges into the most dangerous passes of the mountains; he climbs up, he leaps from rock to rock, without considering how he can return. The night often finds him in the heat of the pursuit; but he does not give it up for this obstacle. He considers that the Chamois will stop during the darkness, as well as himself, and that on the morrow he may again reach them. He passes then the night—not at the foot of a tree, nor in a cave covered with verdure, as does the hunter of the plain—but upon a naked rock, or upon a heap of rough stones, without any sort of shelter. He is alone, without fire, without light; but he takes from his bag a bit of cheese and some of the barley bread, which is his ordinary food—bread so hard that he is obliged to break it between two stones, or to cleave it with the axe which he always carries with him to cut steps which shall serve for his ladder up the rocks of ice. His frugal meal being soon ended, he puts a stone under his head, and is presently asleep, dreaming of the way the Chamois has taken. He is awakened by the freshness of the morning air; he rises, pierced through with cold; he measures with his eye the precipices he must yet climb to reach the Chamois; he drinks a little brandy (of which he always carries a small provision,) throws his bag across his shoulder, and again rushes forward to encounter new dangers. These daring and persevering hunters often remain whole days in the dreariest solitudes of the glaciers of Ghamouni; and, during this time, their families, and, above all, their unhappy wives, feel the keenest alarm for their safety.

"The very few individuals of those who grow old in this trade bear on their countenances the traces of the life which they have led. They have a wild, and somewhat haggard and desperate air, by which they may be recognized in the midst of a crowd. Many of the superstitious peasants believe that they are sorcerers; that they have commerce with the evil spirit; and that it is he that throws them over the precipices."—*Buffon's Nat. Hist.*

THE GREYHOUND.

If we are to regard external appearances only, the Greyhound may be placed at the head of the dog tribe, as there is an elegance in his form which will be vainly sought in any other variety of the canine race. At what precise period the Greyhound first made his appearance in Great Britain is not known; but it must have been many centuries ago—all trace, in fact, of the origin of this animal is completely buried in the oblivion of antiquity.

In ancient times, the Greyhound was considered as a valuable present, especially by the ladies, with whom it appears to have been a particular favourite; as, for instance, the wife of Robert Bruce, when a prisoner to Edward I. in the year 1304, had three men and three women servants, three *Greyhounds*, plenty of game and fish, and the fairest house in the manor.

In a manuscript of Froissart, quoted by Montfaucon, there is an illuminated view of Isabella's splendid entrance into Paris in 1324; a *Greyhound* attends her, with a flag powdered with *Fleur de lys* about his neck.

In the 10th and 11th centuries, the price of a Greyhound and also of a hawk appears to have been the same as that of a man. During the reign of King John, Greyhounds were frequently received by him as payment in lieu of money, for the renewal of grants, fines, and forfeitures belonging to the crown. The following extracts show this monarch's attachment to Greyhounds. A fine paid in the year 1203 mentions five hundred marks, ten horses, and ten leashes of *Greyhounds;* another in 1210, enumerates, one swift running horse, and six *Greyhounds.*

We make the following interesting extract from Carr's "Stranger in Ireland:"—"In the morning (says the author, who was then on his journey to Ireland,) I wandered to a little church, which owed its elevation to this interesting circumstance: Lewelyn the Great, who resided near the base of Snowden, had a beautiful *Greyhound*, named *Gelert*, which had been presented to him by King John. One day, in consequence of the faithful animal, who at night always sentinelled his master's bed, not making his appearance in the chase, Lewelyn returned home very angry, and met the dog, covered with blood, at the door of the chamber of his child: upon entering it, he found the bed overturned, and the coverlit stained with gore: he called to his boy, but receiving no answer, he too rashly concluded that he had been killed by Gelert, and in his anguish, instantly thrust his sword through the poor animal's body. The honourable Mr. Spencer has beautifully commemorated the above event:—

His suppliant looks, as prone he fell,
No pity could impart;
But still his Gelert's dying yell
Hung heavy at his heart.

Aroused by Gelert's dying yell,
Some slumberer waked nigh:
What words the parent's joy could tell,
To hear his infant cry.

Nor scathe had he, nor harm, nor dread;
But the same couch beneath,
Lay a gaunt wolf, all torn and dead,
Tremendous still in death.

Ah! what was then Llewelyn's pain,
For now the truth was clear;
His gallant hound the wolf had slain,
To save Llewelyn's heir.

To mitigate his offence, Llewelyn built this chapel, and raised a tomb to poor Gelert; and the spot to this day is called *Beth Gelert;* or, the Grave of Gelert, "where never could the spearmen pass or forester unmoved."

A further instance of the attachment of the Greyhound is to be found among the specimens of early English Metrical Romance, by George Ellis, Esq., under the article *Sir Friamous;*

"The good Greyhound, for weal ne wo,
Would not fro the knight go;
But lay and licked his wound:
He weened to have heald him again,
And thereto he did his pain;
Lo! such love is in a hound!

"He even scraped a pit for the dead body, covered it with moss and leaves, and guarded it with constant attention, except during the times when he was employed in securing his own subsistence.

"As his prey diminished, the length of his chase gradually increased; and at the close of the seventh year, at the festival of Christmas, he suddenly appeared, gaunt with hunger, an unexpected visitor in the hall of King Arragon. Such an apparition excited general surprise, and particularly attracted the attention of Aradas; but the animal, with a gentleness of demeanour, which belied his savage appearance, made the round of the tables and disappeared. He returned on the second day, again surveyed the company, received his pittance, and retreated. The king now recollected the dog, and gave orders to his attendants, that, if he should return, they should follow without loss of time, in the confidence that he would lead them to the place where Sir Roger and the Queen were secreted. On the third day of the festival, the hall was filled at an early hour, and Sir Marrack for the first time took his seat amongst the guests. The Greyhound did not fail to repeat his visits, and with the rapidity of lightning, instantly sprung upon the murderer of his master:—

"He took the steward by the throat,
And asunder he it bote;
But then he would not 'bide:
For to his grave he ran.
Then followed him many a man,
Some on horse, and some beside,
And when he came where his master was,
He laid him down upon the grass,
And barked at the man again.

"The crowd who had followed him, being unable to drive him from the spot, returned with the tidings to the king, who instantly comprehended the whole mystery. He directed them to dig for the body, which they readily found, and which had been miraculously preserved in such a state of preservation as to be easily recognized. It was then buried in holy ground with all due solemnity, and the faithful dog shortly after expired on the tomb which was raised in memory of his master."

The Greyhounds, however, of these early days, were, in all probability, something similar to the Irish wolf dog, or large rough Greyhound, from which the modern Greyhound was bred no doubt, but, in the progress of what was considered improvement, very much altered in appearance, and became less powerful and less courageous. The modern Greyhound exhibits a striking instance of what may be accomplished by attention in the way of speed and beauty; but this has been obtained at the expense of strength, of courage, and of sagacity. We have many recorded instances of the striking sagacity of the Greyhound of old; but it is an incontrovertible fact, that the modern high-bred Greyhound, on the score of sagacity, is inferior to every other variety of the dog tribe. But to proceed—

In former days, such was the esteem in which Greyhounds were held, that even their collars were composed of the most valuable materials. In Hawes' Pastime of Pleasure, written in the time of Henry VII. Fame is attended with two Greyhounds; in whose golden collars, *Grace* and *Governance* are inscribed in golden letters. These ornaments are often mentioned in the inventory of furniture, in the royal palaces of Henry VIII. In the Castle of Windsor, under the article *Collars*, may be found the following entries:—

"Two *Greyhounds' collars* of crimson velvet and cloth of gold, lacking *torretes.*"

"Two other collars with the king's arms, and at the ende portcullis and rose."

"Item.—A collar, embrowdered with pomegranates and roses, with torretes of silver and gilte."—"A collar garnished with stole work, with one shallop shelle of silver and gilte."

In Henry the Eighth's reign, the Greyhound was distinguished as one of the king's beasts:—we read that at the siege of Tournay, in the year of 1513, instead of a tent, Henry had a timber house with an iron chimney, and several pavilions, on the top of which stood "the king's beastes, viz. the lion, the dragon, the antelope, the Greyhound, and the dun cow."

The old couplets that describe the Greyhound are very

exact in the points they recommend as necessary to form a complete Greyhound.

"Head like a snake,
Neck'd like a drake,
Back'd like a beam,
Sided like a bream,
Tailed like a rat,
And footed like a cat."

In choosing a whelp, the choice was formerly governed by the weight, and that which was the lightest, it was supposed, would prove the nimblest and best. The raw-boned, lean, loose-made, and unseemly whelps, grew up well-shaped dogs; whereas, those that after three or four months appeared round, close trussed, and well built in every part, were not worth the rearing, seldom proving swift or comely. It was also an observation formerly, that *bitches* were commonly more *speedy* than the dogs.

The *time* to first try and train them to their game was at twelve months old, and there is little variation in this respect at the present day.

At two years old, the Greyhound is full-grown, and the choice of one at that age was to be directed by his having a fine skin, with soft thin hair, a long lean head, with a nose sharp from the eye downwards; a full clear eye, with large eye-lids, little ears, a long neck bending like a drake, with a loose hanging weasand, broad breast, his body neither too long, nor too great, a back straight and square, having a rising in the middle, a small belly, broad shoulders, round ribs, with a long space between his hips, a strong stern, a round foot with large clefts, and his fore-legs straighter than his hinder.

The breeding of the Greyhound was recommended to be from the well-tried and best bitches, as an indifferent dog was supposed from such a cross to get better whelps than if the excellence was inverted, and the bitch but tolerable; the surest way to have the whelps excellent was to have both sire and dam good, and not to exceed four years old; if any inequality in their age, it was deemed better to be on the bitch's side, so that the dog was young.

The art of keeping a Greyhound formerly, as well as entering him properly at his game, is thus described:—The keeping of a Greyhound properly did not consist solely in the meat given him, but also in *kenneling, airing* and *exercise*. When he was full in flesh, he was to have the chippings of bread in fresh broth. Milk and bread, butter-milk and soft bones, morning and evening, which was understood to keep him healthy. When he was low in condition or unwell, sheep's heads or feet with *the wool on*, chopped into small pieces and made into broth, with oatmeal and sweet herbs, was to be his daily food until he recovered his flesh and health.

The kennel was to be commodious, airy, the door towards the south, and the sleeping benches two feet and a half high, perforated with holes for the purpose of carrying off the urine: (a dog of any kind, will rarely eject either his urine or excrements on his bed; on the contrary, if closely confined, he will frequently howl for hours, and even days, sooner than be guilty of what appears repugnant to his nature:) the straw on the bench was to be frequently changed, and the kennel kept extremely clean.

For Greyhounds that were going to run, the following diet was recommended:—a peck of wheat, half a peck of oatmeal, ground and forced through a sieve; aniseeds bruised and liquorice were to be scattered amongst it; and it was then to be kneaded up with the whites of eggs and new ale, into small loaves, which were to be well baked. This was to be soaked in beef or other broth, and given to them immediately after their airings, morning and evening.

Previously to airing, the dog was to be brushed or rubbed with a hair cloth; he was then to be led out in a leash half an hour after sun-rising, to some plain where there were neither cattle nor sheep, there to be suffered to frisk about and empty himself, when he was to be led back. In the evening, all this was to be repeated; and in winter, he was allowed once a day the indulgence of the fire. It was recommended to keep him always in kennel, as it was thought his spirit and activity were thereby increased.

The exercise recommended for the Greyhound was coursing; if the courses were long, twice a week was deemed sufficient; otherwise, every other day, and they were to be rewarded and encouraged with the *blood* of the hare. When they were first entered, it was allowable to give them every advantage—such as finding a young hare and giving her no law; but this was not allowable after he had once got blood.

A toast and butter, upon coursing days, was given early in the morning; if the dog killed the hare, he was not allowed to break her; the hare was taken from him, his mouth cleared of the fur; and he had afterwards the heart, liver, and lights given him.

After a very hard run, his feet were to be washed with salt and water; and after remaining in the kennel for half an hour, he was to be fed.

In regard to the modern feeding and training of the Greyhound, opinions are by no means unanimous. Some insist that they should go through a regular course in these respects, something like a race horse. It is asserted, that a dog which has long courses to run should never be over-

burthened with flesh, and that a Greyhound too fat should have two doses of physic, allowing an interval of six days, and to be moderately blooded between the doses; his food afterwards to be dry boiled meat, occasionally changed to fine oatmeal, reduced to a proper consistency with boiled milk. If with this preparative food, he be allowed to run two or three courses a week, and be regularly rubbed with a hair cloth all over until the flesh upon his loins becomes elastic and hard, so far as preparation goes, he is complete. Yet it is admitted that all this nicety, all this systematic training and preparation, have frequently been thrown away, and the same dog that has failed in running, when thus artificially prepared, has showed itself far superior in its performances, when no course of training has been previously adopted.

One thing, however, the writer will venture to state, that the Greyhound should, if possible, always be suffered to go at large. Nothing so much promotes health and activity as a state of perfect freedom.

[*Sportsman's Cyclopedia.*

NOTES OF A NATURALIST.

By Jacob Green, M. D.

In a deep valley on the bank of a small creek, about two miles from the village of Canonsburg, in Washington County, Pennsylvania, there is a spring of salt water, from which a quantity of inflammable air is constantly escaping.

Twelve years since a well was excavated in this place about 200 feet deep, by the ordinary process of boring for water, for the purpose of manufacturing salt, as the brine springs in this neighbourhood appeared very promising.

A considerable quantity of salt was here manufactured, but as the brine began to grow gradually weaker, it was thought that by tubing the well, to keep out the fresh water which oozed through the sides, and by boring it deeper, that the strength of the brine would greatly increase. This plan was therefore put into execution; the well was tubed with copper, and excavated 200 feet more; so that its whole depth was nearly 400 feet.

When these operations were almost completed, there was a sudden and violent rush of inflammable gas from the sides of the well, about 100 feet below the surface; which not only produced a collapse or flattening of the copper tubes, but projected the water, and large volumes of the gas, between 40 and 50 feet above the surface of the ground, in the form of a magnificent fountain. In the night, when a torch was applied to this jet of water and air, it was ignited, and then exhibited a most sublime and magnificent spectacle. Its blaze illuminated the whole valley, and the trees on the summits of the surrounding hills were silvered with the light. This vast column of water by day and of fire by night, continued pouring and blazing to the attitude of about 20 feet, for a number of weeks.

When the tube, which extended a few feet above the surface, and by which the jet was produced, was removed, so that the gas passed freely through a large body of water in the curb of the well, the whole presented the appearance of violent ebullition. It seemed as if an intense fire beneath this natural chaldron kept the water perpetually boiling in the most furious manner, not unlike the Guisers in Iceland. The noise occasioned by the escape of the gas could be heard at the distance of many yards, so that strangers on their approach, were often not a little terrified at the sound, and imagined that the earth trembled beneath their feet.

The quantity of inflammable gas in this vicinity was so abundant, that small tubes of elder or tin thrust into the ground near the creek, so as to form little jet pipes, the gas escaping from them could be kindled; and it would then burn for a long time with the steady light of a lamp.

The water of the creek and the fire of the ignited gas were for some time used by the ingenious persons in the neighbourhood for washing and boiling their clothes. A kettle of water, suspended on cross sticks, over a hole dug in the ground, from which the burning vapour issued, were the economical substitute for the implements and fire of the kitchen hearth.

The above account is the substance of what I heard respecting the "*Burning Salt-well,*" which induced me to visit it in 1827, some years after its first irruption. I found it situated as just described, in a deep valley near the road-side. The apparent ebullition of the water, and the consequent escape of the gas, was still very considerable. A hole in the ground, about four feet square and deep, cased with timber, forms the curb of the well. The bottom is covered with water to a small depth, and near the middle boils and sparkles from the escape of the gas, which issues from the deep narrow cavity beneath. The water is muddy, and pretty strongly impregnated with salt. It is, however, not sufficiently saturated to make the extraction of the salt from it, by the ordinary process of boiling, a lucrative operation. I now attempted to kindle the gas near the surface of the ground, but being unable to do this, I sprung into the curb of the well, and while lighting a chloric match, the gas took fire all round me, producing a slight explosion, which of course extinguish-

ed the blaze. I repeatedly kindled and exploded the gas in this manner, but never succeeded in obtaining a steady blaze for any length of time, on account of the smallness of the quantity which issued in a stream, from the water. I caught a quantity of it in a number of vessels, and from various experiments, I have little doubt that it is as pure hydrogen gas as is obtained in the common processes of the laboratory. It is lighter than any of the well-ascertained hydro-carburets, and it burns with nearly the same pale lambent flame as common hydrogen. There is, however, a distinct sulphurous odour which always accompanies it. My situation, however, was not favourable for making any accurate experiments.

The hills which surround the burning spring are stratified with beds of bituminous coal, which repose on thick horizontal strata of clay slate. The salt spring appears to be far below the clay slate. In boring the well, they were obliged to cut through thick strata of compact carbonate of lime, which alternated with strata of clay slate. No fossils have been found in the neighbourhood.

In 1831, four years after my first visit to the burning well, when the above observations were made, I again examined the spot; but the inflammable gas could no longer be detected, and the water had not the slightest saline taste.

In 1832, I again examined this *Burning Salt-well*, and again found the water a little brackish, and a considerable quantity of inflammable air escaping from its surface, so that I filled a number of vessels with the gas, and amused myself with igniting and exploding it, several times.

SARGASSO, OR SEA WEEDS.

In the North Atlantic Ocean, coming from the South you fall in about the tropic, with the Sargasso Weeds, collected in narrow lines extending in the direction in which the trade wind blows, that is, E. N. E. and W. S. W., and the eye cannot see the end of them on either side of the vessel. These lines run constantly parallel to each other, and the nearer you come to the middle of the Sargasso sea, the thicker it is strewed with weeds, and the closer the lines approach to one another, being in some places but fifteen feet asunder. Home-bound ships have a better opportunity of observing these lines, as they cross nearly at right angles, and can trace their continuation more conveniently on both sides, observing one line after another in rapid succession.

These weeds occupy the zone from about 20° to 35° north latitude, which may, however, differ according to the longitude in which you cross it. Towards the zone's northern extremes, the weeds are less regularly formed in lines, which may arise from their being less methodically acted upon by the trade winds that seem to occasion their order. They have been termed gulf weeds by sailors, who believed them to be driven out of the gulf by the Florida stream; nor is this opinion entirely refuted by the experience that they are rarely met with in the gulf. For the weed swimming on the surface of the Atlantic is withered, decayed, and incrusted with salt, which proves the time it has been exposed to the sun, and is of a brownish yellow colour, whilst you rarely meet with a green bunch; that, being heavier, on account of its high state of vegetation, swims several feet below the surface. It is true that not with certainty can any roots, thicker branches, or stems be perceived, wherewith they might have adhered to the rocks or the ground: nevertheless, as these weeds abound with animals that do not live upon the surface, but inhabit the bottom of the sea, such as crabs, shrimps, barnacles, conchilias of all descriptions, and serpents, I have no doubt that they originated in a shallow basin of water, out of which they were swept by the force of a current along the bottom, until the heavier vegetable fluid being exhausted, they rose to the surface. Moreover, they are never seen near the European or African coasts, but most plentifully found about the entrance of the gulf.

[*Phil. Mag.*

EXTRAORDINARY SAGACITY OF A DOG.

On Saturday night, a boy 12 or 14 years of age, who was climbing on the face of a rock in the Grange quarry, Edinburgh, in search of birds' nests, fell into the deep pool below. His companion ran away, calling for help, and a crowd soon collected. A housecarpenter who was present, ran off to the Grange House, for Sir Thomas Lander's Newfoundland dog. The animal immediately sprang in the pool, and made for the place, where the body, though under water, was still visible. He dived once or twice, and, seizing the boy's head, which chanced to be uppermost, he in vain attempted to bring the body ashore; for, as if aware of the necessity of using the most gentle treatment to so vulnerable a part, he took so gentle a hold, that the head slipped from him, and the body sunk deeper and deeper at every successive attempt. Again he dived, and appeared on the surface raising the head gently between his two forepaws, but again it slipped from his grasp, and sunk deeper than ever. The dog now seemed to take council with himself; he made one or two circles

BLUE CRANE. HUDSONIAN GODWIT.

From nature V. on Stone Childs & Inmans Lith.

over the place where the body had disappeared, and then dived. He remained under water so long, that the by-standers began to entertain considerable fears for his safety. At length, to the great satisfaction of those present, he appeared holding the corpse by the arm, and with his head thrown aside, so as to keep the head of his burthen clear above the water, and in this way he bore it to the bank. The body was immediately taken to a house, and all exertions and means were used to restore the body to animation, but in vain. The dog would not leave the body, but stand by it, licking the face, and exhibiting his full share of the sympathy excited by this melancholy catastrophe. There was not the slightest scratch on the boy's head or face.—*Scotsman.*

BLUE CRANE, OR HERON.

[Plate XIV. Vol. 2.]

Arct. Zool. No. 351.—Catesby, i, 76.—*Le Crabier bleu* Buff. vii. 398.—Sloan. *Jam.* ii, 315.—Lath. *Syn. v.* 3 *p.* 78, *No* 45,—*p.* 79, *var. A.*—*Ardea cærulescens*, Turt. *Syst. p.* 379.—*Heron bluatre de Cayenne*, Buff. *Pl. Enl.* 349, *adult.*—Philadelphia *Museum.*

In mentioning this species in his translation of the *Systema Naturæ*, Turton has introduced what he calls two *varieties*, one from New Zealand, the other from Brazil; both of which, if we may judge by their size and colour, appear to be entirely different and distinct species; the first being green, with yellow legs, the last nearly one half less than the present. By this loose mode of discrimination, the precision of science being altogether dispensed with, the whole tribe of Cranes, Herons, and Bitterns, may be styled mere *varieties* of the genus *Ardea*. The same writer has still farther increased this confusion, by designating as a different species his *Bluish Heron* (*A. cærulescens*,) which agrees almost exactly with the present. Some of these mistakes may probably have originated from the figure of this bird given by Catesby, which appears to have been drawn and coloured, not from nature, but from the glimmering recollections of memory, and is extremely erroneous. These remarks are due to truth, and necessary to the elucidation of the history of his species, which seems to be but imperfectly known in Europe.

The Blue Heron is properly a native of the warmer climates of the United States, migrating thence, at the approach of winter, to the tropical regions; being found in Cayenne, Jamaica, and Mexico. On the muddy shores of the Mississippi, from Baton Rouge downwards to New Orleans, these birds are frequently met with. In spring they extend their migrations as far north as New England, chiefly in the vicinity of the sea; becoming more rare as they advance to the north. On the sea-beach of Cape May, I found a few of them breeding among the cedars, in company with the Snowy Heron, Night Heron, and Green Bittern. Their nests were composed of small sticks, built in the tops of the red cedars, and contained five eggs of a light blue colour, and of somewhat a deeper tint than those of the Night Heron. Little or no difference could be perceived between the colours and markings of the male and female. This remark is applicable to almost the whole genus; though from the circumstance of many of the yearling birds differing in plumage, they have been mistaken for females.

The Blue Heron, though in the northern states it is found chiefly in the neighbourhood of the ocean, probably on account of the greater temperature of the climate, is yet particularly fond of fresh water bogs, on the edges of the salt marsh. These it often frequents, wading about in search of tadpoles, lizards, various larvæ of winged insects and mud worms. It moves actively about in search of these, sometimes making a run at its prey; and is often seen in company with the Snowy Heron. Like this last, it is also very silent, intent and watchful.

The genus Ardea is the most numerous of all the wading tribes, there being no less than ninety-six different species enumerated by late writers. These are again subdivided into particular families, each distinguished by a certain peculiarity. The Cranes, by having the head bald; the Storks, with the orbits naked; and the Herons, with the middle claw pectinated. To this last belong the Bitterns. Several of these are nocturnal birds, feeding only as the evening twilight commences, and repo ing either among the long grass and reeds, or on tall trees, in sequestered places, during the day. What is very remarkable, those night wanderers often associate, during the breeding season, with the others; building their nests on the branches of the same tree; and, though differing so little in external form, feeding on nearly the same food, living and lodging in the same place; yet preserve their race, language, and manners as perfectly distinct from those of their neighbours, as if each inhabited a separate quarter of the globe.

The Blue Heron is twenty-three inches in length, and three feet in extent; the bill is black, but from the nostril to the eye, in both mandibles, is of a rich light purplish blue; iris of the eye grey, pupil black, surrounded by a narrow silvery ring: eyelid light blue; the whole head, and greater part of the neck, is of a deep purplish brown;

from the crested hind-head shoot three narrow pointed feathers, that reach nearly six inches beyond the eye; lower part of the neck, breast, belly and whole body, a deep slate colour, with lighter reflections; the back is covered with long, flat, and narrow feathers, some of which are ten inches long, and extend four inches beyond the tail; the breast is also ornamented with a number of these long slender feathers; legs blackish green; inner side of the middle claw pectinated. The breast and sides of the rump, under the plumage, are clothed with a mass of yellowish white unelastic cottony down, similar to that in most of the tribe, the uses of which are not altogether understood. Male and female alike in colour.

The young birds of the first year are destitute of the purple plumage on the head and neck. WILSON.

HUDSONIAN GODWIT.

SCOLOPAX HUDSONIA.

[Plate XIV. Vol. 2.]

THIS beautiful shore bird, is for the first time pictured and presented to the public, through the "Cabinet of Natural History and American Rural Sports;" and the editor is much indebted to the Philadelphia Museum for this valuable acquisition to the ornithology of North America. It is a rare bird, being the only one of that species in the collection of the Museum, and as represented in the plate, is clothed in summer plumage. The only notice of this bird by former writers, is found in the supplementary part of Pennant's Arctic Zoology, and appears to have been communicated for publication there by the celebrated ornithologist Latham. The editor of this work has accordingly adopted the name for the bird supplied by that author.

The Hudsonian Godwit is nearly seventeen inches in length, and twenty-eight in extent; bill three, bending a little upwards; the base half palish brown, the rest black; crown blackish, spotted, and streaked with dusky white; sides of the head and back part of the neck nearly the same, but paler; lore dusky; over the eye a whitish streak; chin of same colour; back and scapulars dusky brown, spotted with rufous; lesser wing coverts brown; in the middle paler, and marked with a few spots of white; larger coverts, plain ash colour; quills black, with white shafts, the bases of them, from the fourth, white for one-third of their length; rump white; the whole under parts, from the throat to the vent, fine rufous bay, waved across, with dusky lines; under tail coverts, waved with white, bay and black; tail feathers white at base, and dusky the rest of their length to within a quarter of an inch of the end, which is dirty white; the inner vanes, of the outer tail feathers, white; legs black.

The chief abode and places of incubation for this bird appear to be Hudson's Bay and other northerly regions; as we have no notice of its being met with further south than Cape May, where the bird from which the present drawing is made was shot, in May, 1828, by Mr. Titian R. Peale. From thence north it is sometimes, though not frequently seen, and if seen, not known, and appears as fond of wandering along the shores of fresh water ponds as the sea side; it is social in its disposition; being met with in company with the Golden Plover. They usually appear in small parties of four or five; are not shy at first, but unsuspicious and easily shot, but it is seldom met with in the above plumage, which so differs from its fall or winter dress, that none but an experienced eye could identify the bird as the same when found in the latter plumage. From this circumstance I am inclined to think it much more common than is supposed; but not having appeared south, it has been unnoticed by Wilson and others, and thus omitted in the respective works on American Ornithology.

Mr. I. F. Ward, a naturalist of New York, who collects quantities of birds from different parts of the United States, for public and private cabinets, informs me, that he scarcely ever met with the Hudsonian Godwit, except on Hempstead Plains on Long Island, and then rarely dressed in the above plumage.

SPORTING IN THE WILDS OF CANADA.

IN deer stalking, and, indeed, all kinds of sporting in this country, it is often necessary to camp out,—that is bivouac in the woods. This would appear to a man who is curious in well-aired sheets, as the next way to the other world; but in reality there is nothing either dangerous or unpleasant in the proceeding. Every man carries with him in the woods, punk, that is, German tinder, a fungous excrescence of the maple, and a flint. With this and the back of his knife, a light is struck, and the ignited piece cut off from the mass. This is put into dry moss, and blown or swung round the head until it blazes, and thus a large fire of logs is kindled. Spruce and hemlock are stripped, and moss gathered to make a bed; and if it be dry overhead nothing further is necessary, the party all sleeping with their feet turned towards the fire. If, how-

ever, it threatens rain, a tent or wigwam of bark can soon be erected, perfectly weather tight. And in winter this may be rendered more comfortable by shoveling the snow up on the walls so as to exclude the wind.

When a bear runs away with one of your pigs, there is no use in going after him, hallooing, without a gun. You may scare him away from the mutilated carcase, but it will make indifferent pork. But trace to where he has dragged it, and near sunset let self and friend hide themselves within easy distance, and he will be certain to come for his supper, which, like all sensible animals, he prefers to any other meal. Nay, it is highly probable, if he possesses the gallantry which a well bred bear had ought to have, he will bring Mrs. Bruin and all the children along with him, and you can transact business with the whole family at once.

In hunting the bear, take all the curs in the village along with you. Game dogs are useless for this purpose; for unless properly trained, they fly at the throat, and get torn to pieces or hugged to death for their pains. The curs yelp after him, bite his rump, and make him tree, where he can be shot. The bear of Canada is seldom dangerous. He is always ready to enter into a treaty, "let be for let be"—but if wounded, he is dangerous in the extreme. You should always, therefore, hunt him in couples, and have a shot in reserve, or a goodly cudgel, ready to apply to the root of his nose, where he is as invulnerable as Achilles was in the heel. Some ludicrous stories are told of bear hunting; for Bruin is rather a humorist in his way. A friend of mine with his surveying party, ten men in all, once treed a very large one; they immediately cut clubs, and set to work to fell the tree. Bruin seemed inclined to maintain his position, till the tree began to lean, when he slid down to about fifteen feet from the ground, and then clasped his fore paws over his head and let himself tumble amongst them. Every club was raised, but Bruin was on the alert; he made a charge upon the man immediately in front, and escaped with two or three thumps on the rump, which he valued not one pin.

When once they have killed a pig, if you do not manage to kill the bear, you will never keep one hog; for they will come back till they have taken the last of them;—they will even invade the sacred precincts of the pig stye. An Irishman in the Newcastle district once caught a bear *flagrante delicto*, dragging a hog over the walls of a pew. Pat instead of assailing the bear, thought only of securing his property; so he jumped into the stye, and seized the pig by the tail. Bruin having hold of the ears, they had a dead pull for possession, till the whilli-looing of Pat, joined to the plaintive notes of his *protege*, brought a neighbour to his assistance, who decided the contest in Pat's favour, by knocking the assailant on the head. A worthy friend of mine, of legal profession, and now high in office in the colony, once, when a young man, lost his way in the woods, and seeing a high stump, clambered up it with the hope of looking around him. While standing on the top of it for this purpose, his foot slipped, and he was precipitated into the hollow of the tree, beyond the power of extricating himself. While bemoaning there his hard fate, and seeing no prospect before him, save that of a lingering death by starvation, the light above his head was suddenly excluded, and his view of the sky, his only prospect, shut out by the intervention of a dense medium, and by and by he felt the hairy posteriors of a bear descend upon him. With the courage of despair he seized fast hold of Bruin behind, and by this means was dragged once into upper day. Nothing, surely, but the instinct of consanguinity could have induced Bruin thus to extricate his distressed brother.—*St. Andrew's Current.*

From the New England Galaxy.

SOME PASSAGES FROM THE DIARY OF A SPORTSMAN.

[Concluded from page 116.]

Few birds are more generally known than the wild goose. In its migrations it traverses an immense extent of country; and it is common in the spring and fall of the year to see vast flocks of these birds passing continually over our heads. They sometimes fly so near the earth that hundreds of these winged armies are cut off by the guns of the villagers. On such occasions when the approach of the wild geese is announced, it creates as much excitement as if a hostile force were marching upon the town, with drums beating and banners flying. At these times there is no desire of exemption from service, but each man with a hearty zeal that would avail much in cases of human evasion, seizes his gun, and blazes away like vengeance. They alight along the borders of our sea-shore, or more commonly within our vast bays, where they are shot down by myriads. I remember a singular mode of carrying on the war against them on one occasion, practiced in a certain place, (that shall be nameless,) in the state of Maine. A party of hardy old wild fowl shooters, impatient of cutting off the flocks in detail, with the common gun, succeeded in dragging a six-pound *field piece* to the sea-shore, which they loaded with several pounds of swan shot and pistol bullets, and opened a battery upon the enemy. But they soon were satisfied that this novel

weapon would not answer their purpose. It made a vast deal of noise, and discharged a very large volume of flame and smoke, but did no damage to the enemy. In fact the attempt was as vain and fruitless as it would be to detach a strong train of heavy artillery, to act against a horde of flying Tartars, or roving Cossacks.

But it is rare that they allow themselves when on the wing to approach within gun shot of the fowler. Their flight is not a little remarkable for its extreme regularity. The following is a description of the mode by which, in certain places, which at ebb tide consist of vast muddy flats covered with green sea-weed, "the shooter with his gun, as evening draws on, runs up in his boat among the little creeks which the tide leaves in the mud lands, and lies in patient expectation of his prey. Sea fowl usually feed by night, when in all their multitudes they come down to graze on the savannahs of the shore. As the sonorous cloud advances, (for their noise in the air resembles a pack of hounds in full cry,) the attentive fowler listens which way they bend their course; perhaps he has the mortification to hear them at too great a distance for his gun to reach them; and if he cannot edge his boat round some winding creek, which it is not always in his power to do, he despairs of success that night. Perhaps, however, he is more fortunate, and has the satisfaction to hear the airy noise approach nearer, till at length the host settles in some plain upon the edge of which his boat is moored. He now, as silently as possible, primes both his pieces anew, (for he is generally double armed,) and listens with all his attention: it is so dark that he can take no aim; for if he could discern the birds, they would also see him; and being extremely timorous, would seek some other pasture. Though they march with noise, they feed with silence; some indistinct noises, however, if the night be still, issue from so vast a concourse; he directs his piece therefore towards the sound, fires at a venture, and instantly catching up his other gun, discharges it where he supposes the flock to rise on the wing. His gains for the night are now decided, and he has only to gather his harvest. He immediately puts on his mud pattens, (flat, square pieces of board which the fowler ties to his feet, that he may not sink into the ooze,) ignorant yet of his success, and goes groping about in the dark in quest of his booty, picking up sometimes many, and perhaps not one! But this is a very hazardous and uncertain sport; for the boat is liable to become fixed immoveably in the mud; and the wounded birds, which cannot be collected, are swept away by the returning tide. I have heard of these shooters, who, when once traversing one of these oozy plains in search of ducks, and being intent only on his game, suddenly found the water, which had been accelerated by some peculiar circumstances affecting the tide, had made an alarming progress around him. In a short time he was completely encircled, and miraculously saved his life by thrusting the barrel of his long gun into the mud, to which he continued to cling until the waters had subsided. It is not a little hazardous to venture forth on rough waters in one of these little "punts," usually employed by water fowl shooters. In this little egg-shell of a skiff he drops down with the tide, or cautiously uses the paddle, and knowing their haunts, takes every advantage of wind, tide, &c. His gun, of great calibre, is laid with the muzzle over the stern of the boat, in a hitch, which regulates the line of aim. In the bottom of the little egg-shell the sportsman deposits his limbs and body as comfortably as possible; and a very moderate inclination to either side will endanger a total shipwreck. It is customary to paint those little skiffs with a green colour, or, what is better, to cover the sides with sea weed; a deception which enables you to approach within shooting distance, without giving alarm. But these slight boats are so easily upset, that it is absolutely essential that the fowler should be an expert swimmer. Indeed it is a species of foolhardiness for any person who is in the habit of shooting along the sea-shore to venture into exposed places, without the ability in case of need, to escape by swimming. A friend of the writer not long since, when shooting on the sandy flats of Sandwich, owed his life to his skill as a swimmer. The game on the occasion alluded to chanced to be abundant, and in his ardour, he suffered the tide to rise unobserved and completely environ him. When he became first aware of his peril, he perceived that a strong and rapid current was furiously racing between himself and the shore, and he saw that his only safety consisted in attempting without a moment's delay to stem it, and reach the opposite shore. But upon wading into the current, he soon ascertained that there was no resting place for his foot, as the quicksands beneath him yielded to his pressure, and unless he could manage to keep above them by swimming, he must be swallowed up. He was encumbered with a heavy game bag, (overflowing with slaughtered plovers,) and a flask and shot belt in addition to his gun. He contrived, in the water, to disencumber himself of the former, and was soon compelled, though unwillingly, to relinquish the latter, which sank to rise no more, and with great exertion he reached the shore when completely exhausted. The gun was, (I fear,) irretrievably lost; yet if any of my sporting friends should ever happen to unearth it, I would thank them to leave it at the Galaxy office, till called for, "and they shall be suitably rewarded."

Duck shooting is perhaps more practiced by the sportsmen in this neighbourhood, than any other species of shoot-

ing. These birds are numerous, and we have great facilities for taking them. At this season of the year, and in autumn, all the surrounding shores and bays are lined with gunners in pursuit of them. At this period, they may be seen swimming among the very wharves of the city, with as much unconcern as if paddling about in the remotest northern ocean. At Nantasket, at Cohasset, or Nahant, or Sandwich, we dare say they may now be found in abundance. In some places they are taken in decoys, into which they are enticed by decoy-ducks. These consist of reeds planted in water, and bent over in the form of a tunnel, and covered with a net. The manner of managing a decoy is as follows: As soon as the evening is set in, the decoy rises, as they term it, and the wild fowl feed during the night. If the evening be still, the noise of their wings, during their flight, is heard at a very great distance, and produces no unpleasant sensation. The fowler when he finds a fit opportunity, and sees his decoy covered with fowl, walks about the pool, and observes into what pipe or tunnel, the birds gathered in the pool may be enticed or driven. Then casting hemp-seed or some such seed as will float on the surface of the water, at the entrance and up along the pipe, he whistles to his decoy-ducks, who instantly obey the summons, and come to the entrance of the pipe, in hopes of being fed as usual. Thither also they are followed by a whole flock of wild ones, who little suspect the danger preparing against them. The wild ducks, therefore, pursuing the decoy-ducks, are led into the broad mouth of the channel or pipe, nor have the least suspicion of the man, who is there concealed. When they have got up the pipe, however, finding it grows more and more narrow, they begin to suspect danger, and would return back, but they are now prevented by the man, who shows himself at the broad end below. Thither, therefore, they dare not return; and rise they may not, as they are kept by the net above from ascending. The only way left them, therefore, is the narrow-funneled net at the bottom; into this they fly and there they are taken.

It often happens, however, that the wild fowl are in such a state of sleepiness or dozing, that they will not follow the decoy-ducks. Use is then generally made of a dog who is taught his lesson. He passes backward and forward among the reed-hedges, in which there are little holes both for the decoy-man to see, and for the little dog to pass through. This attracts the eye of the wild fowl, who, prompted by curiosity, advance towards this little animal, while he all the time keeps playing among the reeds, nearer and nearer the funnel, till they follow him too far to recede. Sometimes the dog will not attract their attention till a red handkerchief or something very striking be put about him. In China, such numbers of gourds are at all times floating down their rivers, or on the surface of the pool, that the ducks from habit, are not startled by them; John Chinaman taking advantage of this circumstance, has hit upon a very ingenious device for taking them. He hollows out one of these gourds, large enough to enclose his head, and with his whimsical headgear, wades into the water, taking care that his body is concealed beneath the water. By this method, he manages to jerk the whole flock, one after another under the surface, where strangulation soon deprives them of the power to sound the alarm to their comrades. M.

For the Cabinet.

UNITED BOWMEN OF PHILADELPHIA.

"All by the shady green-wood tree,
The merry, merry archers roam;
Jovial and bold, and ever free,
They tread their woodland home.
Roving beneath the moon's soft light,
Or in the thick embowering shade,
List'ning the tale with dear delight,
Of a wand'ring Sylvan Maid."

[*Archers' Glee in the Maid of Judah.*

Such in the olden time was the occupation of the gallant Bowmen and Forresters gay, when the heart expanded in the joys of the chase, the limbs grew strong, and the pulse beat high in its exulting clamour; or perchance, its fatigues were forgotten "in the thick embowering shade," telling "the tale" to some "Sylvan Maid," who, "in dear delight" "list'ning," scarce knows that a figurative shaft from that sly archer, the son of Cypria's Queen, has pierced the very *red* of her heart. But oh! these degenerate days, a bare common, the refuge of the sheep-boy and his shorn flock, is the melancholy contrast, without a vestige of "embowering shade."

Well, so let it be, there is still enjoyment enough, and more than ordinary in the drawing of the bow, and the twang of the string, when we remember that our embowering shade is the west side of the street, five in every seven afternoons, through the broiling summer, and our "jovial, bold, and free," is developed in the right to elbow, wedge, and work our way, at the expense of sundry contusions upon our ribs, and a heavy discount for perspiration up to the polls, as we all most feelingly experienced on the *second Tuesday* last.

We live now in an age so artificial, that rural sports and the anecdotes of their followers, are listened to as ro-

mances of times that are passed; and as for "Sylvan Maids," "bless you child," as aunty Dina used to say, there has not such a thing been heard of for the three last centuries; and what have we in their place? I would tell if I could: they are ladies, for that is the only polite way of speaking their titles; but as to what they are, their "form and pressure," that is a hidden mystery, composed, we timidly guess, of puffs, stiffenings, and nameless things, supported on a frame work, that I have been told is real flesh, and all the other matters that constitute the "noblest work," but differing in that inconsiderable item the heart, that obsolete member being, (as the naturalists say,) "wanting in this specimen." I know not, it may be, that my old limbs are gouty, my blood cold, and my temper soured by the cares and anxieties, not to say the ingratitude of life, such as I have experienced, but I do not look upon the "gay beings," the butterfly beauties of the present day, with the same feelings that I once loved so well to indulge. I could tell you, that in bygone youth I wandered where the melody of the brook in broken murmurs stole upon my ear, where the song of the wood robin, in its loveliest wood notes wild, were heard in the mellow twilight, and the native honeysuckle shed its richest fragrance round, fanned by the fairy wing of the humming-bird; in that lone place, and in that sweet hour, I heard the gentle breathing of her, who is still so dear to memory, more musical than that soft brook, whose voice was far more melodious than that tuneful bird's whose eyes, in the rapture of my gaze, seemed like stars from the firmament above us, in their own mild radiance steeped; that hour has passed, those eyes and that sweet voice have returned to the heaven, from whence I thought them, in my fond devotion, stolen; and methinks even at this late day, when the *fall* of life is fast closing upon me, shedding its sere and yellow leaf upon my path, that I still see those eyes in the firmament, and hear that sweet voice in the gentle wind of summer: but no, it is the memory, that busy tattler, who, upon the cold and dreary reality of present existence, of't intrudes with her phantom smiles, to cheer for a moment, but to leave too soon the same cold surface it had for a moment broken, like the still lake of the woods, whose placid bosom is ruffled for a moment into lights and shadows by the falling of a decayed limb from the enamoured tree that had so long hung over it in fondness.

I have been betrayed by reckless memory into forgetfulness of the business of the hour, and must before I resume it, make an apology to the ladies for what has been penned in this, to them, dull scrawl; for some one may perchance, on a rainy day, try to beguile the hour, by looking over the pages of the Cabinet. Now what apology can I make? Why truly none, save this: they need not heed me, for I am old, and like the oak upon the hill, my head has been scathed by the lightnings of many storms, my arms like its boughs are withered, and the canker is in my heart. "Logan is the last of his name;" that fragrant rose bush that stood at my side has died in its young loveliness; its pale leaves scented the air at my feet for a few short seasons, and now I am alone. Can we who have lived so long, see with eyes that youth and its young hopes tinge all on which they rest with their own celestial azure? No, it is the green of the goggles with which we shade our dull vision, that lends its predominant colouring of yellow melancholy to all that in youthful fancy is so bright and glowing: with this as my apology, let me depart in peace.

"The merry merry archers" meet often, and well we know the pleasures of the bow, and of't regret that its use is not more general; how many and how agreeable are the topics that it affords for discussion, reflection, arrangement and fancy; let us begin with the bow, and give you in it, a sample of the variety of matter that it affords for agreeable occupation, even before it is bent.

"Tell me, S**, what wood is your bow made of?

"Which do you mean, the body or the back?

"It's made of two pieces, is it?

"Yes, the body is Lemon, a fine elastic wood, but too brittle to bear the strain without a back; this of mine is backed with lance wood, the toughness of which prevents the body from breaking, and you see when the bow is unstrung that it has a back-set, which is given it in the making.

"Is it strong? Let me try it.

"No, you don't, we never allow a bow to be handled by the uninitiated, for this reason; you see the back-set, and take it for granted, that the proper mode is to bend it in that direction; the effort is made, and in one instant the bow is in two pieces. Your apology is, (after being very sorry and all that,) that you had no idea that it would break so easy; but I had, and so chose to run no risk. So particular are practised archers in this respect, that a rule is adopted never to draw a bow unless an arrow is *nocked*. Another reason for care is, that the upper and lower limbs of the bow are of different strength and length, the handle being below the centre, so that the arrow may be discharged from the middle of the string."

This conversation is supposed to pass between the adept and the uninitiated; the practised archer inquires of his companion,

"What is the strength of your bow?

"About fifty-five pounds; I wish it was not quite so strong, for I think I could shoot better if it were weaker, especially

at eighty yards distance, for I have always observed, that if the left arm trembles while you are *drawing up*, you cannot depend on your shooting. The wind is against us at this target, and I have not yet made sufficient allowance for it.

"Do you draw with two fingers or three?

"I pursue a different plan from usual in *drawing*, using shooting gloves upon the second and third fingers only, and of course drawing principally with those two, and using the first but slightly. I think that the brace being sewed fast to the sleeve is more convenient than the usual method of fastening it with straps and buckles; the triangular pocket that we have attached to our belts, is an improvement on the strap and pouch of the English equipment, sent to us by Waring of London,* if that equipment is the same that is in common use. It may look as if egotism misleads us, but in some of the minor matters of convenience, we think we have made improvements; for instance, besides the matters just mentioned, look at the backs of our targets, made of Carolina moss, quilted between strong linen. No arrow has ever passed through, and there is no symptom of wear from use; it appears to me that they will endure as long as our association, and heaven grant that that may be, until we are as aged as our venerated ancestor of the bow, Sir William Wood, 'who his long life to that alone did owe.'

"Let me look at your arrows—how well they are made, and how neatly painted; you have chosen a beautiful colour—light blue; but your mark is not so easily made as mine. An anchor is, however, very appropriate.

"What do you think the best weight for arrows?

"About three-fourths of an ounce; (you observe that I have abandoned the old terms of 2 and 4 and 2 and 6, because they convey no decided impression to the mind.) I think one ounce too heavy, unless you shoot with a very strong bow, or in windy weather.

"I was unfortunately absent from the city on the 12th of September, the day of our annual prize shooting, and had no opportunity of hearing the particulars. Will you tell me how you made out?

"With pleasure, particularly from the circumstance of my having no personal interest in the contest, further than the esprit de corps; that is so remarkable in the members of our club, you may remember, that good luck has been my portion for a prize shooting or two; and as there were several young archers, new associates, who stood in need of encouragement, I determined not to take a part in the competition. Our worthy associate ♃ had drawn by lot the duties of captain of the target, at the same time that he took the first chance in the order of shooting. I therefore volunteered to act as captain and register, and relieve the competitors from all duties save that of making the best display of skill they could. I had a good opportunity of observing the men, and although some of them had been put through the archer's drill, as given in our manual, but a few days in anticipation of this contest, they took their places upon the *stand*, *nocked* their arrows, and drew to the ear, with the steadiness of veterans. The time of shooting was two hours, from three to five; and as there were nine persons shooting at one pair of targets, the number of rounds were few; they shot as usual in pairs, in order to save as much time as possible. There were lots of muslin, (as our nicknaming associate, ♃, calls the ladies,) and a high wind, both unfavourable circumstances to composure and good shooting. This gentleman, like myself, has seldom had good luck in a contest of this kind, where the excitement usually produces a bad effect upon the nervous system; but notwithstanding these disadvantageous circumstances, he acquitted himself nobly, having fourteen hits, the value of which was 60, two in the gold, one of which was nearest the centre, and would have entitled him to the secondary prize, if he had not gained the first; ♈ therefore took the secondary, a piece of luck that shows the utility of the secondary prize; for the hit nearest the centre, this being the second if not the first time that this gentleman had drawn a bow at the target.

"The first prize for the value of hits, is inevitably the property of the best archer, provided he can command his nerves, and say, with effect to his heart, 'peace, be still.' There is the card, you see that.

♃	has	14	hits,	value	60
☉	"	9	"	"	31
♌	"	16	"	"	52
♐	"	4	"	"	16
♎	"	1	"	"	5
♒	"	11	"	"	47
♓	"	3	"	"	15
♑	"	9	"	"	29
♈	"	5	"	"	19

"No great shooting, you will say; granted, but as good as prize shootings usually are: we can tell in looking over our target book, when we have a prize register before us, by the fewness of the hits, except there is this note in the margin, in the angular, or best printing hand, of the Secretary. 'Knocked off on account of rain, time of shooting twenty-five minutes.'"

October 15th, 1832.

* P. S. We have been much delighted since the above notice was sent to you, by the reception of a fine parcel of bows and arrows from Scotland, being from the celebrated manufactory at Kilwinen. The bows are of Scotch yew, and the arrows the neatest I have ever seen. Our new members are now elegantly equiped, and we have a spare stock in reserve.

RURAL SPORTS,

OR RECOLLECTIONS OF A SPORTSMAN.—NO. I.

"'Tis not that rural sports alone invite,
But all the grateful country beams delight;
Here blooming health exerts her gentle reign,
And strings the sinews of the industrious swain."

RURAL sports have been admitted in every age. The good, the great and the wise, have in their turn freely enjoyed them, and while those which are gentlemanly and recreative in their tendency are to be desired and cherished, there are others injurious to the morals of a community which are to be deprecated and rejected. Happily, our country does not sanction those sports of cruelty, which, in some countries, are considered national, and the patronage of which very properly illustrates the dispositions of the people who encourage them.

Without resorting to the combats of wild animals, bull fights, pugilism, &c., nature has abundantly supplied us with other means of enjoyment. Our numerous hills, and almost endless forests; our fertile valleys and extensive plains; our brooks, rivers and sea-side, teem with unnumbered subjects for the hunter, sportsman and angler. But

"There are who think these pastimes scarce humane,
Yet in my mind, (and not relentless I,)
His life is pure that wears no fouler stain."

To these enjoyments the natural feelings of mankind incline. The force of habit and education has no control when the individual is relieved from the restraint of civilized life, and placed in circumstances in which he may exert this principle of nature. That man inclines to the "hunter state," is contended for by many eminent writers, who also labour to prove, that the scattered population of the earth, both of man and beast, has been effected chiefly by this principle. The truth of this position we can in a great measure assent to, from what we constantly see, and what most feel, viz. that there is in our natures an instinctive disposition towards pastural amusements, that displays its energies in the very spring-time of life, as well in christian as in savage infancy; which matures and strengthens with age through successive years, commencing as soon as the infantile mind is alive to the beauties of rural things, and ending only in the days of second childhood.

My fondness for rural sports was acquired at a very early age, and during that period when the city of Philadelphia was scourged by the desolating influence of the yellow fever. My parents, like a multitude of other inhabitants, fled the city and located themselves on an ancient, but beautiful and romantic farm, about nine miles distant, where, for the first time in my life, I roamed the woods and fields, while all around me appeared strange and invitingly beautiful; and I felt as though I had begun life anew. I had not then reached my seventh year, yet the ever changing varieties which unfolded themselves to my youthful mind, added new energies to a disposition already vivid, and being free from the restraint so necessary in a city, I was permitted to wander wherever my disposition led me. It was not long before the variety of pleasures there to be enjoyed, were eagerly sought and entered into with all the animation consequent to a playful child.

The old stone mansion stood on a hill whose base was washed by a beautiful and rapid stream which meandered through woods and meadows for many miles, until it finally deposited its troubled waters into the bosom of the Delaware river. This stream gave occasion for me to exercise my first disposition for sportiveness along its fragrant banks.

I well remember the first hour when I was led by the parental hand in search of the finny treasure which this creek contained. My father was fond of fishing and gunning, although he claimed not the title of sportsman in either, but it was only when idleness was forced upon him, and the dull monotony of a country life made his hours tedious and insupportable, that he would take the rod or gun, and go in pursuit of fish or fowl. On this first essay my implements consisted of a rod cut from an alder bush, a line of homespun thread, a crooked pin for a hook, and a common cork float. Thus equipped, I no doubt felt as satisfied, and anticipated as much enjoyment from the resources before me, as any devout follower of "honest old Isaac," with the most approved and complete apparatus of modern times, and my bosom throbbed with as much intensity of feeling at the "first nibble," as does that of an experienced fisherman when exerting his science to land the "monarch of the brook." Such, reader, may have been your experience; and you will readily forgive any extravagance of feeling which a recurrence to those days of childhood may excite. But I love to dwell on the scenes of boyhood; these were days of comparative innocency, unmingled with the turmoil and disappointment consequent to human life. Then I wandered unconscious of future trouble in search of pleasure through fields and flowery meadows, and beside that ever murmuring brook—whose waters, every day, I visited, until at length novelty subsided, and fishing gave place to fondness for the gun.

In those days shooting on the wing was of rare occurrence, and the individual who could accomplish this, was,

in the view of the rustics, considered as a being of superior order; the chief objects of game were rabbits and squirrels; and it was only when the unsuspicious covey of partridges was huddled together from the cold or the inclemency of a snow storm, beneath a holly bush or group of cedars, that these birds were ever shot, and the slaughter thus effected was made an occasion for boasting in proportion to the number slain at a single shot, which sometimes amounted to ten or fifteen. The guns in use at that period were mostly single-barrelled, and would measure from five to seven feet in length, and were more valued in proportion to their length; the settled opinion being, that the longer the gun, the further and more powerful would it throw the shot, and have an established character for being a "good squirrel gun." Other important items to establish in their characters were, that they should be good "turkey guns"—that is, capable of winning at turkey matches. It was a custom then, (and is in a measure followed to this day,) for both old and young men to assemble at the different inns through the country, during the holydays, to shoot at targets for turkeys, geese, and other poultry; consequently, it was all important that the different rivals or competitors should possess good shooting guns; and the most successful at these matches were enhanced in value in proportion to the quantity of fowls won. Some of these guns were of very ancient date, and had in many instances descended from generation to generation for nearly a century; while these old family pieces were regarded as sacred relics of ancestral renown with as much piety and care as if a moral obligation was involved in their good or bad treatment. Not quite such a gun did my father possess, and although not so superannuated, it bore abundant marks of antiquity, and gave good evidence of its capability by dropping squirrels from the tallest hickories.

To me the sound of a gun was more musical than any thing else, and no weather was too inclement; no hardship too severe, but I would sustain it to follow my father; through sleet and snow, over craggy precipices, intensely suffering from fatigue, cold and laceration from thorns and briars, without a murmuring word or disposition to return home. Attached as I was to a gun, however, and as much as I loved its report, I was still fearful to shoot one; and it was not until a considerable length of time that I could be induced to make the attempt. At that time it was more customary among the country folks to "fire away the old year," than at present; and it was on an occasion of this kind, that I, for the first, shot off a gun; this I accomplished by resting the muzzle on a fence and pulling the trigger; but the moment I fired I relinquished my hold and sprung backwards as from a poisonous reptile, to the amusement of many lookers on; whose mirth and teasing on that occasion for ever afterwards prevented a like occurrence.

Thus I overcame the first difficulty, and my leisure moments or holydays for some years were always employed with the gun in shooting sparrows, snowbirds and the like; and if by chance I shot a lark or robin, I concluded my enterprise by returning hastily to my home, to present my trophy as evidence of my proficiency. "But there is a tide in the affairs of men," and so there was in mine, for the funds which I would now and then accumulate by the pennies given to me by friends and strangers, were insufficient to procure as much powder and shot as my disposition for gunning required, and I had to adopt in lieu thereof other pastimes and amusements. Now, a very favourite sport among my school fellows was that of catching squirrels, that is, the ground and flying squirrels; the former it is well known dwell in burrows or holes under ground, to which they betake themselves when pursued by an enemy, and from which it is a difficult matter to dislodge them; boys, however, are never at a loss for stratagem, and the plan we most successfully followed was, by pouring their holes full of water obtained from a neighbouring brook, which would bring forth the tenants generally half drowned, and render them easy objects of capture. The vessels employed usually to effect this were our hats; these we would unhesitatingly dip into the water, and rather suffer the unpleasantness of wet hats to cover our heads, and the risk of flogging from our parents, than forego the satisfaction of catching a single ground squirrel.

The flying squirrel was captured as efficacious, but with more difficulty. When these are driven from their nests, (which usually are composed of leaves and fixed in the large fork of a tree some height from the ground,) they will immediately ascend to the very topmost branches of the same tree, in order, when danger presses them, to escape by making a descent by flight, as it is called, to the butt of some neighbouring tree. When, therefore, they would reach the extremity of a branch, one of the party would clamber the tree with a long slim pole swung to his wrist, on the end of which was a noose made of horse-hair, and, as this species is less shy and more innocent than most others, they would generally suffer themselves to be approached within ten or twelve feet, and by much care and quietness, the noose could without difficulty be placed over the head of the little victim and thus make it prisoner. In this way we caught many old squirrels, and then by securing the nests, which frequently contained several of their young, it not only was a source of amusement, but profit.

RUSTICUS.

A PENNSYLVANIA HUNTER.

The settlers in the new countries of the United States frequently met with interesting adventures connected with their woodland life, which, if collected, would form a very amusing volume.

Mr. Hall, in his "Legends of the West," has commenced a series of tales to elucidate the manners of the early inhabitants of that part of our country, and, far as he has gone, has, like an accomplished *raconteur*, performed his task with much taste and talent. The field before him is very extensive, and as his tales are told with great simplicity and beauty, I think his work will become, as it ought to be, very popular.

The manners of the woodsmen of the northern and southern states differ considerably from each other, depending on their previous education and habits. I shall not, however, attempt to draw any comparisons, as they might by some be considered invidious. In the forests of Pennsylvania, since the peace of 1783, there have been no enemies to encounter worse than bears, wolves and panthers: but even these have sometimes led to incidents which gave evidence of a spirit that wanted nothing but excitement and opportunity to rank high in the scale of heroes—from Macedonia's madman, &c.

Nothing is more true than that we are the creatures of circumstances, and that many a quiet citizen has gone to his grave "unhonoured and unsung," who had, but never suspected that he had within himself qualities, which, in other situations, might have served to "point a moral and adorn a tale." I have known many persons of this kind among our American woodsmen. I will mention one who lives a few miles from me, Jonathan Elsworth; I mention his name, but it is not probable that he will ever know that he has got into the Cabinet of Natural History, and if he shall, he will be very much surprised to find himself there.

The most frequent loss sustained by the new settlers is of their sheep, destroyed by "wild varmints," as they are sometimes called, but of a very different kind from those with which that prince of honest fellows, Dandy Dinmont, was accustomed to "enter" the numerous progeny of his far-famed Pepper and Mustard. By the way, I could tell you something about them; but *revenons a nos moutons*.

Several sheep had been taken from Jonathan and his neighbours, and having heard something of the circumstance, I desired him to tell me what had occurred. I should perhaps say, that Jonathan is one of the mildest spoken men that you can find. Look at him, and you would think that the most becoming garment for him would be "the drab coat of William Penn." I say this, entertaining much respect for the said coat, especially if it be worn by an honest man, as it always ought to be.

What is the story of the hunt which you had, Jonathan, after the marauders in your sheep fold? I have heard somethink about it: but tell it yourself. "Why, no great matter," said Jonathan, in his peculiar sleepy tone, "it was not much." Let me hear it, however. "Well, you heard, then, how something came and took our sheep on the North Branch. Nobody could tell what it was; for, you see, we could not find any tracks about, and the sheep were gone; not partly eaten, and the bones left; but all was gone; one one night, and another another night; and so I kind of guessed that it must be some wild animal that had its young in the neighbourhood, and that it took them off to its den. Well, I thought if it held on that way, it would take all the sheep; and so I thought I would take a hunt; for I guessed that its den could not be far away, whatever it was. But we, none of us, could tell what the nation it could be; for we could not find any tracks. Some guessed it was a bear; and some guessed it was a painter; and some guessed it was a wolf; but I did not think a wolf or painter would carry a sheep off without eating any of it where he caught it; and so I thought it was a bear; for a bear is a very handy fellow with his paws, and it would make you laugh to see one on a chesnut or beech tree, gathering nuts. But I guess you have seen them at it. So, as I thought it was not right for him to take all the sheep, I calculated that I had better take a hunt for him, or her, or all of them, and I started off in the morning, and went first one way, and then another way, where there were some rocks, and where a creature of the kind might harbour; but there was no signs of any thing at any of the places, and I thought I might give it up for a bad job that time; and so I made a turn to go home again. I was going along, thinking of nothing at all, when I came to a great pine tree that had been broken off near the root, and which lay right across the way I was going; and I just thought may be it would be a good shingle tree if it is sound, and I went by the butt like, to look at it: but it was all hollow, and I took notice that there were a sort of tracks, or paths like, all about it, and some bones, and I said, why I should not wonder if the darned thing was in this here tree. I peeped all round, but I could see nothing; and so I stooped down and put my head in the hole, and I heard something scratching and whining, and I said to myself, I vow they are here! And then it just struck me, how shall I get at them? At first I thought that the best way would be to stop up the hole with stones and sticks, till I could go and get an axe, and some of the neighbours to help cut them out. And then I thought if I stop up the

hole, and one of the old bears is out, may be before I get back—for it was three miles in the woods from home—it will come and pull away my stopping stuff, and they will all be off before I get back; and then I shall have my hunt for nothing. No, I won't do that, any way. Well then, there was but one other way for it, and so, as the tree was very straight, I just levelled my rifle like into the hole, as exactly in a line as I could, according as the tree lay, and I fired away, and then stept back, so as to knock any thing that should come out down with my rifle; and I had the advantage on my side, for only one could come out at a time, if the tree was full of them. But nothing came out. Well, after waiting some time, I poked my head into the tree to listen again, and I heard the same noise of scratching, and another noise, which I was sure was of an animal choking with the blood in his throat; and I thought now its a pity I have not a dog with me; but I had no dog, and so I said I shall have to act dog myself. I had some thought of shooting into the tree again; but it was a pity to waste the lead; for I was sure that the bear, or whatever he was, was choaked already; but then I was not quite sartain sure whether it was the old one, or the young ones, or all of them that were in the tree; and I was in a poker-ish kind of a situation; for may be it was only the young ones, and if I went in, the old one might come in after me. But I thought the tarnal thing should not get off after all; and so I loaded my rifle, and put two balls in it, and when I crept into the tree, I took my knife in my right hand forward, and I pulled my rifle along after me with the other hand, with the muzzle pointing backwards, so that if any one came in after me, I might have a crack at it. Well, when I got into the tree it was quite dark, and I crept, and crept, and crept, till I thought there was almost no end to it; for it was a very great pine, and you know how tall the pines grow near the North Branch. However, at last, when I had got into it, I guess a matter of fifty feet, I put my hand on something hairy, and I found it was a young one. It was dead; I had killed it. And then I had to creep out again, and pull it after me. And so I went in again, and got another dead one. I had killed two. My ball had gone right through one, and into the other. And then I went in again, and again, and again, and so brought out three live ones; and after all they were all young wolves, and no bears at all."

But, Jonathan, when you crept, and crept, as you say "a matter of fifty feet," pulling your rifle after you, suppose they had been bears, as you thought, and one had come in after you, and you had fired away, and shot it dead, and you then in the tree, and three miles from any house, how would you have got out?

"Sure enough—I never thought of that." R.

AN EXTRAORDINARY PIKE.

I saw a very large fish, (says Colonel Thornton,) come at me, and, collecting my line, I felt I had him fairly hooked; but I feared he had run himself tight round some root, his weight seemed so dead; we rowed up, therefore, to the spot, when he soon convinced me he was at liberty, by running me so far into the lake, that I had not one inch of line more to give him. The servants, foreseeing the consequences of my situation, rowed with great expedition towards the fish, which now rose about seventy yards from us, an absolute wonder! I relied on my tackle, which I knew was in every respect excellent, as I had, in consequence of the large Pike killed the day before, put on hooks, and gimp, adjusted with great care; a precaution which would have been thought superfluous in London, as it certainly was for most lakes, though here, barely equal to my fish. After playing him for some time, I gave the rod to Captain Waller, that he might have the honour of landing him; for I thought him quite exhausted, when to our surprise, we were again constrained to follow the monster nearly across this great lake, having the wind, too, much against us. The whole party were now in high blood, and the delightful Ville de Paris quite manageable; frequently he flew out of the water to such a height, that though I knew the uncommon strength of my tackle, I dreaded losing such an extraordinary fish, and the anxiety of our little crew was equal to mine. After about an hour and a quarter's play, however, we thought we might safely attempt to land him, which was done in the following manner: Newmarket, a lad so called from the place of his nativity, who had now come to assist, I ordered, with another servant, to strip and wade in as far as possible; which they readily did. In the mean time I took the landing net, while Captain Waller judiciously ascending the hill above, drew him gently towards us. He approached the shore very quietly, and we thought him quite safe, when, seeing himself surrounded by his enemies, he in an instant made a last desperate effort, shot into the deep again, and, in the exertion, threw one of the men on his back. His immense size was now very apparent; we proceeded with all due caution, and, being once more drawn towards land, I tried to get his head into the net, upon effecting which, the servants were ordered to seize his tail, and slide him on shore: I took all imaginable pains to accomplish this, but in vain, and I began to think myself strangely awkward, when at length, having got his snout in, I discovered that the hoop of the net, though adapted to very large Pike, would admit no more than that part. He was, however, completely spent, and, in a few moments, we landed him, a perfect monster! He

was stabbed by my directions in the spinal marrow, with a large knife, which appeared to be the most humane manner of killing him, and I then ordered all the signals, with the sky-scrapers, to be hoisted; and the whoop re-echoed through the whole range of the Grampians. On opening his jaws, to endeavour to take the hooks from him, which were both fast in his gorge, no dreadful a forest of teeth, or tushes, I think I never beheld: if I had not had a double link of gimp with two swivels, the depth between his stomach and mouth would have made the former quite useless. His measurement, accurately taken, was five feet four inches, from eye to fork.

On examining him attentively, I perceived that a very large bag hung deep below his belly, and, thinking it was lower than usual with other Pike, I concluded that this had been deeply fed but a short time before he was taken. After exhibiting him, therefore, to several gentlemen, I ordered that my housekeeper, on whom I could depend, should have him carefully opened the next day, and the contents of his stomach be reserved for inspection; and now ordering the servants to proceed with their burden, we returned to Avemore, drank tea, and afterwards went on to the Raits, where we produced our monster for inspection, to the no small gratification of the spectators, whose curiosity had been strongly excited to view a fish of such magnitude.

Agreeable to the orders of the preceding day, Mrs. C. opened the Pike, and sent to us the contents of his stomach, which, to our surprise, consisted of part of another Pike half digested. The tumour, or bag, arose from his having, no doubt many years since, gorged a hook, which seemed to us better calculated for sea than for fresh-water fishing. It was wonderfully honey-combed, but free from rust, so that I cannot doubt of its having been at least ten years in his belly. His head and back bone I ordered to be preserved in the best manner I could devise, and the rest to be salted down.

The weight of this fish, judging by the trones we had with us, which would only weigh twenty-nine pounds, made us, according to our best opinions, estimate him at between forty-seven and forty-eight pounds. I had before this seen Pike of thirty-six pounds, and have had them at Thornville of above thirty; but the addition of seventeen pounds and a half made this quite a different fish. There may be larger Pike, but I cannot readily credit the accounts of such until I receive more authentic information. This extraordinary fish was taken in Loch Alva, in the Highlands of Scotland.

[*Sportsman's Cyclopedia.*

MANNER OF PRESERVING GAME, BY POISONING GROUNDS, AS ADOPTED IN ENGLAND AND IRELAND.

The best mode for preserving grouse, is by poison, *nux vomica*, and yellow arsenic, of each, half an ounce, mixed with a quarter of a pound of wheaten flour, and divided into pills of an ounce each. These pills must be dipped in rendered tallow, as candles are, until they have a thick coat of the same, which preserves them, not only from being destroyed by the wet, but it induces the dog to take it; for a dog must be made use of to poach grouse. The poison should be laid round the borders of the property, and a second line inside of the first, so that if the dogs miss the first, they will by chance take the second; it should be put on a slate, or a small stone should be put under it, or a short stick drove in the ground, with the poison secured to the top of it; but not so as to project over the heath, which should be drawn round it, in order to keep it from the sight of the poacher. In Ireland, this is always practised, and those who value their dogs, never attempt to approach the poisoned grounds; by the law there, it is necessary to give a month's notice in the newspaper, printed in the county wherein the property is, and those who wish to poison, are often debarred the pleasure of shooting on their own mountains for the season; but if the poison is marked as it should be, it can be taken up by the keepers, the day before the owner wishes to shoot, and laid again at night, without the smallest risk, if the keeper is a steady person.

A gentleman in the west of Ireland, who was remarkably tenacious of his game, poisoned his mountains one season, and having it marked, used to have it taken up when he thought proper. Some sportsmen who happened to come on it one day to shoot, had three brace of beautiful setters poisoned: in revenge they made up a couple of thousand pills, and in the night, thickly poisoned all these mountains, unknown to the proprietor, who, on taking up his own poison, and going out to shoot, was greatly surprised to find all his fine dogs dead, in the course of three hours after he began to shoot, never suspecting the trap that was laid for him. It is inconceivable to think how immediate the death of every dog is after taking this poison; he seldom outlives seven minutes, except some assistance is given, which a sportsman seldom can come at on a mountain, unless he is aware of poison being laid, and then it is to be hoped, he would not be so imprudent as to risk the life of a valuable dog.

[*Shooting Directory.*

AMERICAN BUFFALOE

AMERICAN BUFFALO OR BISON.

BOS AMERICANUS.

[Plate XV. Vol. 2.]

Bos Americanus: Gmel. *Taurus Mexicanus:* Hernand. *Mex.* 587. *Tauri Vaccæque, Ibid. Anim. p.* 10. *The Buffalo:* Catesby, *Carol.* 28 *tab.* 20. *Bœuf Sauvage:* Dupratz, *Louisiane,* II. 66. *American Bull:* Penn. *Quad. pl.* II. *fig.* 2.

From other species of the ox kind, the Bison is well distinguished by the following peculiarities. A long shaggy hair clothes the fore part of the body, forming a well marked beard beneath the lower jaw, and descending behind the knee in a tuft. This hair rises on the top of the head in a dense mass, nearly as high as the extremities of the horns. Over the forehead it is closely curled, and matted so thickly as to deaden the force of a rifle ball, which either rebounds, or lodges in the hair, merely causing the animal to shake his head as he heavily bounds along.

The head of the Bison is large and ponderous, compared with the size of the body; so that the muscles for its support, necessarily of great size, give great thickness to the neck, and by their origin from the prolonged dorsal vertebral processes form the peculiar projection called the *hump.* This hump is of an oblong form, diminishing in height as it recedes, so as to give considerable obliquity to the line of the back.

The eye of the Bison is small, black, and brilliant; the horns are black and very thick near the head, whence they curve upwards and outwards, rapidly tapering towards their points. The outline of the face is somewhat convexly curved, and the upper lip, on each side being papillous within, dilates and extends downwards, giving a very oblique appearance to the lateral gape of the mouth, in this particular resembling the ancient architectural bas-reliefs representing the heads of oxen.

The physiognomy of the Bison is menacing and ferocious, and no one can see this formidable animal in his native wilds, for the first time, without feeling inclined to attend immediately to his personal safety. The summer coat of the Bison differs from his winter dress, rather by difference of length than by other particulars. In summer, from the shoulders backwards, the hinder parts of the animal are all covered with a very short fine hair, that is as smooth and as soft to the touch as velvet. The tail is quite short and tufted at the end, and its utility as a fly-brush is necessarily very limited. The colour of the hair is uniformly dun, but the long hair on the anterior parts of the body is to a certain extent tinged with yellowish or rust colour. These animals, however, present so little variety in regard to colour, that the natives consider any remarkable difference from the common appearance as resulting from the immediate interference of the Great Spirit.

Some varieties of colour have been observed, although the instances are rare. A Missouri trader informed the members of Long's exploring party, that he had seen a greyish white Bison and a yearling calf, that was distinguished by several white spots on the side, a star or blaze in the forehead, and white fore feet. Mr. J. Dougherty, an interpreter to the expedition, saw in an Indian hut a very well prepared Bison head with a star on the front. This was highly prized by the proprietor, who called it his *great medicine,* for, said he, "the herds come every season to the vicinity to seek their white-faced companion."

In appearance the Bison cow bears the same relation to the bull that is borne by the domestic cow to her mate. Her size is much smaller, and she has much less hair on the fore part of her body. The horns of the cow are much less than those of the bull, nor are they so much concealed by the hair. The cow is by no means destitute of beard, but though she possesses this conspicuous appendage, it is quite short when compared with that of her companion.

From July to the latter part of December the Bison cow continues fat. Their breeding season begins towards the latter part of July and continues until the beginning of September, and after this month the cows separate from the bulls in distinct herds and bring forth their calves in April. The calves rarely separate from the mother before they are one year old, and cows are frequently seen accompanied by calves of three seasons.

The flesh of the Bison is somewhat coarser in its fibre than that of the domestic ox, yet travellers are unanimous in considering it equally savoury as an article of food; we must, however, receive the opinions of travellers on this subject, with some allowance for their peculiar situations, being frequently at a distance from all other food, and having their relish improved by the best of all possible recommendations in favour of the present viands—hunger. It is with reason, however, that the flesh is stated to be more agreeably sapid, as the grass upon which these animals feed is short, firm and nutritious, being very different from the luxuriant and less saline grass produced on a more fertile soil. The fat of the Bison is said to be far sweeter and richer, and generally preferable to that of the common ox. The observations made in relation to the Bison's flesh, when compared with the flesh of the domestic ox,

may be extended to almost all wild meat, which has a peculiar flavour and raciness that renders it decidedly more agreeable than that of tame animals, although the texture of the flesh may be much coarser and the fibre by no means as delicate.

Of all the parts of the Bison that are eaten, the hump is the most famed for its peculiar richness and delicacy; because when cooked it is said very much to resemble marrow. The Indian mode of cooking the hump is to cut it out from the vertebræ, after which the spines of bone are taken out, the denuded portion is then covered with skin, which is finally sewed to the skin covering the hump. The hair is then singed and pulled off, and the whole mass is put in a hole dug in the earth for its reception, which has been previously heated by a strong fire in and over it the evening previous to the day on which it is to be eaten. It is then covered with cinders and earth about a foot deep, and a strong fire made over it. By the next day at noon it is fit for use. The tongues and marrow bones are also highly esteemed by the hunters. To preserve the flesh for future use the hunters and Indians cut it into thin slices and dry it in the open air, which is called *jerking;* this process is speedily finished, and a large stock of meat may thus be kept for a considerable length of time.

From the dried flesh of the Bison the fur traders of the north-west prepare a food which is very valuable on account of the time it may be preserved without spoiling, though it will not appear very alluring to those who reside where provisions are obtained without difficulty. The dried Bison's flesh is placed on skins and pounded with stones until sufficiently pulverized. It is then separated as much as possible from impurities, and one-third of its weight of the melted tallow of the animal is poured over it. This substance is called *pemmican*, and being packed firmly in bags of skin of a convenient size for transportation, may be kept for one year without much difficulty, and with great care, perhaps two years.

During the months of August and September the flesh of the Bison bull is poor and disagreeably flavoured; they are, however, much more easily killed, as they are not so vigilant as the cows, and sometimes allow the hunter to come up with them without much difficulty. Lewis & Clarke relate that once approaching a large herd, the bulls would scarcely move out of their way, and as they came near, the animals would merely look at them for a moment, as at something new, and then quietly resume their grazing.

The general appearance of the Bison is by no means attractive or prepossessing, his huge and shapeless form being altogether devoid of grace and beauty. His gait is awkward and cumbrous, although his great strength enables him to run with very considerable speed over plains in summer, or in winter to plunge expeditiously through the snow.

The sense of smelling is remarkably acute in this animal, and it is remarked by hunters that the odour of the white man is far more terrifying to them than that of the Indian. From the neighbourhood of white settlements they speedily disappear: this, however, is very justly accounted for by Mr. Say, who attributes it to the impolitic and exterminating warfare, which the white man wages against all unsubdued animals within his reach.

As an exemplification of the peculiar strength of their sense of smelling, we may here relate a circumstance mentioned by Mr. Say, in that valuable and highly interesting work, Long's Expedition to the Rocky Mountains, to which we are under continual obligations. These we are the more happy to acknowledge, because we are well acquainted with the solicitude of the gentlemen composing that expedition, to diffuse, as widely as possible, the knowledge of American Natural History.

The exploring party were riding through a dreary and uninteresting country, which at that time was enlivened by vast numbers of Bisons, who were moving in countless thousands in every direction. As the wind was blowing fresh from the south, the scent of the party was wafted directly across the river Platte, and through a distance of eight or ten miles, every step of its progress was distinctly marked by the terror and consternation it produced among the Bisons. The instant their atmosphere was infected by the tainted gale, they ran as violently as if closely pursued by mounted hunters, and instead of fleeing from the danger, they turned their heads towards the wind, eager to escape this terrifying odour. They dashed obliquely forward towards the party, and, plunging into the river, swam, waded, and ran with headlong violence, in several instances breaking through the Expedition's line of march, which was immediately along the left branch of the Platte. One of the party, (Mr. Say himself,) perceiving from the direction taken by the bull who led the extended column, that he would emerge from the low river bottom at a point where the precipitous bank was deeply worn by much travelling, urged his horse rapidly forward, that he might reach this station in order to gain a nearer view of these interesting animals. He had just reached the spot when the formidable leader, bounding up the steep, gained the summit of the bank with his fore feet, and in this position, suddenly halted from his full career, and fiercely glared at the horse which stood full in his path. The horse was panic-struck by this sudden apparition, trembled violently from fear, and would have wheeled and taken to flight, had not his rider exerted his

utmost strength to restrain him; he recoiled, however, a few feet and sunk down upon his hams. The Bison halted for a moment, but urged forward by the irresistible pressure of the moving column behind, he rushed onward by the half-sitting horse. The herd then came swiftly on, crowding up the narrow defile. The party had now reached the spot, and extended along a considerable distance; the Bisons ran in a confused manner, in various directions, to gain the distant bluffs, and numbers were compelled to pass through the line of march. This scene, added to the plunging and roaring of those who were yet crossing the river, produced a grand effect, that was heightened by the fire opened on them by the hunters.

To the Indians and visitors of the western regions the Bison is almost invaluable; we have mentioned that they supply a large part of the food used by the natives, and covering to their tents and persons, while in many parts of the country there is no fuel to be obtained but the dried dung of this animal. The Indians always associate ideas of enjoyment with plenty of Bison, and they frequently constitute the skull of one of them, their "Great Medicine." They have dances and ceremonies that are observed previous to the commencement of their hunting.

The herds of Bison wander over the country in search of food, usually led by a bull most remarkable for strength and fierceness. While feeding, they are often scattered over a great extent of country, but when they move in mass they form a dense almost impenetrable column, which, once in motion, is scarcely to be impeded. Their line of march is seldom interrupted even by considerable rivers, across which they swim without fear or hesitation, nearly in the order that they traverse the plains. When flying before their pursuers, it would be in vain for the foremost to halt, or attempt to obstruct the progress of the main body, as the throng in the rear still rushing onward, the leaders must advance, although destruction awaits the movement. The Indians take advantage of this circumstance to destroy great quantities of this favourite game, and, certainly, no mode could be resorted to more effectually destructive, nor could a more terrible devastation be produced, than that of forcing a numerous herd of these large animals, to leap together from the brink of a dreadful precipice, upon a rocky and broken surface, a hundred feet below.

When the Indians determine to destroy Bison in this way, one of their swiftest footed and most active young men is selected, who is disguised in a Bison skin, having the head, ears, and horns adjusted on his own head, so as to make the deception very complete, and thus accoutred, he stations himself between the Bison herd and some of the precipices, that often extend for several miles along the rivers. The Indians surround the herd as nearly as possible, when, at a given signal, they show themselves and rush forward with loud yells. The animals being alarmed, and seeing no way open but in the direction of the disguised Indian, run towards him, and he, taking to flight, dashes on to the precipice, where he suddenly secures himself in some previously ascertained crevice. The foremost of the herd arrives at the brink—there is no possibility of retreat, no chance of escape; the foremost may for an instant shrink with terror, but the crowd behind, who are terrified by the approaching hunters, rush forward with increasing impetuosity, and the aggregated force hurls them successively into the gulf, where certain death awaits them.

It is extremely fortunate that this sanguinary and wasteful method of killing Bisons is not very frequently resorted to by the savages, or we might expect these animals in a few years to become almost entirely extinct. The waste is not the only unpleasant circumstance consequent on it; the air for a long time after, is filled with the horrible stench arising from the putrifying carcases not consumed by the Indians after such an extensive and indiscriminate slaughter. For a very considerable time after such an event, the wolves and vultures feast sumptuously and fatten to tameness on the disgusting remains, becoming so gentle and fearless, as to allow themselves to be approached by the human species, and even to be knocked down with a stick, near places where such sacrifices of Bison have been made. Lewis & Clarke bestowed the name of *Slaughter River* on one of the tributaries of the Mississippi, in consequence of the precipices along its sides having been used by the Indians for this mode of killing the Bison.

A better and more common way of killing Bison is that of attacking them on horseback. The Indians, mounted and well armed with bows and arrows, encircle the herd and gradually drive them into a situation favourable to the employment of the horse. They then ride in and single out one, generally a female, and following her as closely as possible, wound her with arrows until the mortal blow is given, when they go in pursuit of others until their quivers are exhausted. Should a wounded Bison attack the hunter, he escapes by the agility of his horse, which is usually well trained for the purpose. In some parts of the country, the hunter is exposed to a considerable danger of falling, in consequence of the numerous holes made in the plains by the badger.

When the hunting is ended and a sufficiency of game killed, the squaws come up from the rear to skin and dress the meat, a business in which they have acquired a great degree of dexterity, as they can, with very inferior in-

struments, butcher a Bison with far more celerity and precision than the white hunters.

If a Bison is found dead, without an arrow in the body, or any particular mark attached, it becomes the property of the finder, so that a hunter may expend his arrows to no purpose when they fall off, after wounding or fairly perforating the animal. That the Indians do frequently send their arrows through the body of this animal is well attested by a great number of witnesses. In Long's expedition to the sources of St. Peter's River, it is related that Wahnita, a distinguished chief of the Sioux, has been seen to drive his arrow through the body of one Bison, and sufficiently deep into the body of a second to inflict a deadly wound.

When the ice is breaking up on the rivers in the spring of the year, the dry grass of the surrounding plains is set on fire, and the Bison are tempted to cross the river in search of the young grass that immediately succeeds the burning of the old. In the attempt to cross, the Bison is often insulated on a large cake of ice that floats down the river. The savages select the most favourable points for attack, and as the Bison approaches, the Indians leap with wonderful agility over the frozen ice, to attack him, and as the animal is necessarily unsteady, and his footing very insecure on the ice, he soon receives his death wound and is drawn triumphantly to the shore.

The Cree Indians make a Bison-pound, by fencing a circular space of about a hundred yards in diameter. The entrance is banked up with snow sufficiently high to prevent the animals from retreating after they have once entered. For about a mile on each side of the road leading to the pound, stakes are driven into the ground at nearly equal distances of about twenty yards, which are intended to look like men, and to deter the animals from endeavouring to break through the fence. Within fifty or sixty yards of the pound, branches of trees are placed between the stakes to screen the Indians who lie down behind them, to wait for the approach of the Bison. The mounted hunters display the greatest dexterity in this sort of chase, as they are obliged to manœver around the herd in the plains so as to urge them into the road-way, which is about a quarter of a mile broad. When this is effected, the Indians raise loud shouts, and pressing closely on the animals, terrify them so much, that they rush heedlessly forward towards the snare. When they have advanced as far as the men who are lying in ambush, they also show themselves, increasing the consternation of the Bison by shouting violently and firing their guns. The affrighted animals have no alternative but to rush directly into the pound, where they are quickly despatched by guns or arrows. In the centre of one of these pounds, there was a tree on which the Indians had hung strips of Bison flesh and pieces of cloth, as tributary or grateful offerings to the Great Master of life. They occasionally place a man in the tree to sing to the presiding spirit as the Bisons advance. He is obliged to remain there until all the animals that have entered the pound are killed.

The Omawhaw Indians hunt the Bison in the following manner. The hunters who are in advance of the main body on the march, employ telegraphic signals from an elevated position, to convey a knowledge of their discoveries to the people. If they see Bisons, they throw up their robes in a peculiar manner as a signal for a halt. The hunters then return as speedily as possible to camp, and are received with some ceremony on their approach. The chiefs and magicians are seated in front of the people, puffing smoke from their pipes, and thanking the Master of life with such expressions as "thanks, Master of life, thank you Master of life, here is smoke, I am poor, hungry, and want to eat." The hunters then draw near the chiefs and magicians, and in a low tone of voice inform them of their discovery: when questioned as to the number, they reply by holding up some small sticks in a horizontal direction, and compare one herd at a certain distance with this stick, and another with that, &c.

An old man or crier then harangues the people, informing them of the company, exhorting the women to keep a good heart, telling them that they have endured many hardships with fortitude, and that their present difficulties are ended, as on the morrow the men will go in pursuit of the Bisons and bring them certainly a plenty of meat.

Four or five resolute warriors are appointed at the council of chiefs, held the evening previous, to preserve order among the hunters on the following day. It is their business, with a whip or club, to punish those who misbehave on the spot, or whose movements tend to frighten the game before all are ready, or previously to their arrival at the place whence they are to sally forth.

The next morning all the men, not superannuated, depart at an early hour, generally mounted and armed with bows and arrows. The superintendants or officers above mentioned accompany the swiftly moving cavalcade, on foot, armed with war clubs, the whole preceded by a footman bearing a pipe. When they come in sight of the herd the hunters talk kindly to their horses, using the endearing names of father, brother, uncle, &c., begging them not to fear the Bisons, but to run well and keep close, taking care at the same time not to be gored by them.

Having approached the herd as closely as they suppose the animal will permit without alarm, they halt, that the pipe bearer may perform the ceremony of smoking, which is thought necessary to success. The pipe is lighted, and

he remains a short time with his head inclined, and the stem of the pipe extended towards the herd. He then puffs the smoke towards the Bisons, the heavens, the earth, and the cardinal points successively. These latter are distinguished by the terms sun-rise, sun-set, cold country, and warm country.

This ceremony ended, the chief gives the order for starting. They immediately separate into two bands, which, wheeling to the right and left, make a considerable circuit with a view to enclose the herd at a considerable interval between them. They then close upon the animals, and every man endeavours to signalize himself by the number he can kill.

It is now that the Indian exhibits all his skill in horsemanship and archery, and when the horse is going at full speed, the arrow is sent with a deadly aim and great velocity into the body of the animal behind the shoulder, where, should it not bury itself to a sufficient depth, he rides up and withdraws it from the side of the wounded and furious animal. He judges by the direction and depth of the wound, whether it be mortal, and when the deadly blow is inflicted, he raises a triumphant shout to prevent others from engaging in the pursuit, and dashes off to seek new objects for destruction, until his quiver is exhausted or the game has fled too far.

Although there is an appearance of much confusion in this engagement, and the same animal receives many arrows from different archers before he is mortally wounded or despatched, yet as every man knows his own arrows, and can estimate the consequences of the wounds he has inflicted, few quarrels ever occur as to the right of property in the animal. A fleet horse, well trained, runs parallel with the Bison at the proper distance, with the reigns thrown on his neck, turns as he turns, and does not lessen his speed until the shoulder of the animal is presented, and the mortal wound has been given; then by inclining to one side the rider directs him towards another Bison. Such horses are preserved exclusively for the chase, and are very rarely subjected to the labour of carrying burdens.

The effect of training, on the Indian horses, is well shown in a circumstance related by Lewis and Clarke. A sergeant had been sent forward with a number of horses, and while on his way, came up with a herd of Bisons. As soon as the loose horses discovered the herd, they immediately set off in pursuit, and surrounded the Bisons with almost as much skill as if they had been directed by riders. At length the sergeant was obliged to send two men forward to drive the Bisons from the route before they were able to proceed.

The skins of the Bison furnish the Indians and whites with excellent robes for bedding, clothing, and various purposes. These are most usually the skin of cows, as the hide of the bull is too thick and heavy to be prepared in the way practised by the squaws, which is both difficult and tedious. This consists in working the hide, moistened with the brains of the animal, between the hands, until it is made perfectly supple, or till the thick texture of the skin is reduced to a porous and cellular substance. These robes form an excellent protection from rain, when the woolly side is opposed to it, and against the cold when the woolly surface is worn next to the skin. But when these robes are wet, or for a considerable time exposed to moisture, they are apt to spoil and become unpleasant, as the Indian mode of dressing has no other effect than to give a softness and a pliancy to the leather. On these robes the Indians frequently make drawings of their great battles and victories; a great variety of such painted robes are to be seen in the Philadelphia Museum. The hair of the Bison has been used in the manufacture of coarse cloth, but this fabric has never been extensively employed.

We have already adverted to the great numbers of these animals which live together. They have been seen in herds of three, four, and five thousand, blackening the plains as far as the eye could view. Some travellers are of opinion that they have seen as many as eight or ten thousand in the same herd, but this is merely a conjecture. At night it is impossible for persons to sleep near them who are unaccustomed to their noise, which, from the incessant lowing and roaring of the bulls, is said very much to resemble distant thunder. Although frequent battles take place between the bulls, as among domestic cattle, the habits of the Bison are peaceful and inoffensive, seldom or never offering to attack man or other animals, unless outraged in the first instance. They sometimes, when wounded, turn on the aggressor, but it is only in the rutting season that any danger is to be apprehended from the ferocity and strength of the Bison bull. At all other times, whether wounded or not, their efforts are exclusively directed towards effecting their escape from their pursuers, and at this time it does not appear that their rage is provoked particularly by an attack on themselves, but their unusual intrepidity is indiscriminately directed against all suspicious objects.

We shall conclude this account of Bison, by introducing the remarks of John E. Calhoun, Esq., relative to the extent of country over which this animal formerly roved and which it at present inhabits.

The Buffalo was formerly found throughout the whole territory of the United States, with the exception of that part which lies east of Hudson's River and Lake Champlain, and of narrow strips of coast on the Atlantic and

the Gulf of Mexico. These were swampy and had probably low thick woods. That it did not exist on the Atlantic coast is rended probable, from the circumstance that all the early writers whom Mr. Calhoun has consulted on the subject, and they are numerous, do not mention them as existing then, but further back. Thomas Morton, one of the first settlers in New England, says, that the Indians "have also made description of great herds of well growne beasts, that live about the parts of this lake," Erocoise, now Lake Ontario, "such as the christian world, (untile this discovery,) hath not bin made acquainted with. These beasts are of the bignesse of a cowe, their flesh being very good foode, their hides good lether, their fleeces very useful, being a kind of wolle, as fine almost as the wolle of the beaver, and the salvages do make garments thereof;" he adds, "it is tenne yeares since first the relation of these things came to the eares of the English." We have introduced this quotation, partly with a view to show that the fineness of the Buffalo wool, which has caused it within a few years to become an object of commerce, was known as far back as Morton's time; he compares it with that of the beaver, and with some truth; we were shown lower down on Red River, hats that appeared to be of a very good quality; they had been made in London with the wool of the Buffalo. An acquaintance on the part of Europeans with the animal itself, can be referred to nearly a century before that: for in 1532, Guzman met with Buffalo in the province of Cinaloa. De Laet says, upon the authority of Gomara, when speaking of the Buffalo in Quivira, that they are almost black, and seldom diversified with white spots. In his history written subsequently to 1684, Hubbard does not enumerate this animal among those of New England. Purchas informs us, that in 1613 the adventurers discovered in Virginia, "a slow kinde of cattell as bigge as kine, which were good meate." From Lawson, we find that great plenty of Buffaloes, elks, &c., existed near Cape Fear river and its tributaries; and we know that some of those who first settled the Abbeville district in South Carolina, in 1756, found the Buffalo there. De Soto's party, who traversed East Florida, Georgia, Alabama, Mississippi, Arkansas Territory, and Louisiana, from 1539 to 1543, saw no Buffalo, they were told that the animal was north of them; however, they frequently met with Buffalo hides, particularly when west of the Mississippi; and Du Pratz, who published in 1758, informs us that at that time the animal did not exist in lower Louisiana. We know however of one author, Bernard Romans, who wrote in 1774, and who speaks of the Buffalo as a benefit of nature bestowed upon Florida. There can be no doubt that the animal approached the Gulf of Mexico, near the Bay of St. Bernard; for Alvar Nunez, about the year 1535, saw them not far from the coast; and Joater, one hundred and fifty years afterwards, saw them at the Bay of St. Bernard. It is probable that this Bay is the lowest point of latitude at which this animal has been found east of the Rocky Mountains. There can be no doubt of their existence west of those mountains, though Father Venegas does not include them among the animals of California, and although they were not seen west of the mountains by Lewis and Clarke, nor mentioned by Harmon and Mackenzie as existing in New Caledonia, a country of immense extent, which is included between the Pacific Ocean, the Rocky Mountains, the territory of the United States, and the Russian possessions, on the north-west coast of America. Yet their existence at present on the Columbia, appears to be well ascertained, and we are told that there is a tradition among the natives, that shortly before the visit of our enterprising explorers, destructive fires had raged over the prairies and driven the Buffalo east of the mountains. Mr. Dougherty, the very able and intelligent sub-agent, who accompanied the expedition to the Rocky Mountains, and who communicated so much valuable matter to Mr. Say, asserted that he had seen a few of them in the mountains, but not west of them. It is highly probable that the Buffalo ranged on the western side of the Rocky Mountains, to as low a latitude as on the eartern side. De Laet says, on the authority of Henera, that they grazed as far south as the banks of the river Yaquimi. In the same chapter this author states, that Martin Perez had, in 1591, estimated the province of Cinaloa, in which this river runs, to be three hundred leagues from the city of Mexico. This river is supposed to be the same, which, on Mr. Tanner's map of North America, (Philadelphia, 1822,) is named Hiaqui, and situated between the 27th and 28th degrees of north latitude. Perhaps, however, it may be the Rio Gila which empties itself in latitude 32°. Although we may not be able to determine with precision the southern limit of the roamings of the Buffalo west of the mountains, the fact of their existence there in great abundance, is amply settled by the testimony of De Laet, on the authority of Gomara, l. 6, c. 17, and of Purchas, p. 778. Its limits to the north are not easier to determine. In Hakluyts' collection we have an extract of a letter from Mr. Anthonie Parkhurst, in 1578, in which he uses these words: in the Island of Newfoundland there "are mightie beastes, like to camels in greatnesse, and their feete cloven. I did see them farre off, not able to discerne them perfectly, but their steps shewed that their feete were cloven and bigger than the feete of camels. I suppose them to be a kind of buffes, which I read to bee in the country's adjacent and very many in the firme land." In the same collection, p. 689, we find,

in the account of Sir Humphrey Gilbert's voyages, which commenced in 1583, that there are said to be in Newfoundland, "buttolfes, or a beast, it seemeth by the tract and foote, very large in the manner of an oxe." It may, however, be questioned whether these were not musk oxen, instead of the common Buffalo or Bison of our prairies. We have no authority of any weight, which warrants us in admitting that the Buffalo existed north of Lakes Ontario, Erie, &c., and east of Lake Superior. From what we know of the country between Nelson's River, Hudson's Bay, and the lower lakes, including New South Wales and Upper Canada, we are inclined to believe that the Buffalo never abounded there, if indeed any were ever found north of the lakes. But west of Lake Winnepeck, we know that they are found as far north as the 62d degree of north latitude. Captain Franklin's party killed one on Salt River, about the 60th degree. Probably they are found all over the prairies which are bounded on the north by a line commencing at the point at which the 62d degree meets the base of the Rocky Mountains, and running in a southeasterly direction, to the southern extremity of Lake Winnepeck, which is but very little north of the 50th degree; on the Sardatchawan, Buffalo are very abundant. It may be proper to mention here, that the small white Buffalo, of which Mackenzie makes frequent mention, on the authority of the Indians, who told him that they lived in the mountains, is probably not the Bison; for Lewis and Clarke inform us, that the Indians designated by that name the mountain sheep. It is probable that west of the Rocky Mountains the Buffalo does not extend far north of the Columbia. At present it is scarcely seen east of the Mississippi, and south of the St. Lawrence. Governor Cass's party found in 1819 Buffalo on the east side of the Mississippi, above the falls of St. Anthony: every year this animal's rovings are restricted. In 1822, the limit of its wanderings down the St. Peter, was Great Swan Lake, (near Camp Crescent.)

[*Godman.*

PIKE.

In the whole of the Pike tribe, the head is somewhat flat, and the upper jaw shorter than the other. The gill-membrane has from seven to twelve rays. The body is long, slender, compressed at the sides, and covered with hard scales. The dorsal fin is situated near the tail, and generally opposite to the anal fin.

These fish are found in considerable plenty in most of the lakes in Europe, Lapland, America, and the northern parts of Persia, where they sometimes measure upwards of eight feet in length.

There is scarcely any fish of its size in the world that in voracity can equal the Pike. One of them has been known to choak itself in attempting to swallow another of its own species that proved too large a morsel: and it has been well authenticated, that, in the Marquis of Stafford's canal at Trentham, a Pike seized the head of a swan as she was feeding under water, and gorged so much of it as killed them both.

"I have been assured, (says Walton,) by my friend, Mr. Seagrave, who keeps tame otters, that he has known a Pike, in extreme hunger, fight with one of his otters for a carp that the otter had caught, and was then bringing out of the water."

Boulker, in his Art of Angling, says, that his father caught a Pike that was an ell long, and weighed thirty-five pounds, which he presented to Lord Chelmondeley. His Lordship directed it to be put into a canal in his garden, which at that time contained a great quantity of fish. Twelve months afterwards the water was drawn off, and it was discovered that the Pike had devoured all the fish except a single large carp, that weighed between nine and ten pounds; and even this had been bitten in several places. The Pike was again put in, and an entire fresh stock of fish for him to feed on; all these he devoured in less than a year. Several times he was observed by workmen, who were standing near, to draw ducks and other water-fowl under water. Crows were shot and thrown in, which he took in the presence of the men. From this time the slaughter-men had orders to feed him with the garbage of the slaughter-house; but being afterwards neglected, he died, as it is supposed, from want of food.

The largest Pike that is supposed to have been ever seen, was one caught on the draining of a pool at Lillishall lime-works, near Newport, that had not been fished in the memory of man: it weighed above 170 pounds.

If the accounts of different writers on the subject are to be credited, the longevity of the Pike is very remarkable. Gesner goes so far as to mention a Pike whose age was ascertained to be 267 years.

Pike spawn in March or April. When they are in high season, their colours are very fine, being green, spotted with bright yellow, and having the gills of a most vivid red. When out of season, the green changes to grey, and the yellow spots become pale. The teeth are very sharp, and are disposed in the upper jaw, on both sides of the lower, on the roof of the mouth, and often on the tongue. They are altogether solitary fish, never congregating like some of the other tribes.

Ireland is remarkable for abundance of Pike, and for

the size to which they arrive in its waters; in the river Shannon and in Lough Corrib they have been found nearly seventy pounds weight.

Small fish show a similar uneasiness at the presence of the Pike, as the little birds do at the sight of the hawk or owl; and when they lie dormant near the surface, (as they frequently do in sultry weather,) the lesser fish swim around in vast numbers, and with evident anxiety. Pike are often taken in the hottest part of the days in summer, while they are thus asleep, by a noose of wire, fixed to a strong pole about four yards long; by which the wire with great slowness is conducted over the Pike's head and gill fins, and then hoisted with a jerk to land.

Pike are also frequently shot while thus basking themselves: the marksman aims directly under them: from the deception there is in the water, and its causing the shot to rise much when fired into, he would otherwise miss his object.

Pike love a still, shady, unfrequented water, with a sandy, clayey, or chalky bottom, (arriving at a larger size in pools than rivers,) and from May to the beginning of October, they usually place themselves amongst or near flags, bulrushes, and water-docks, and particularly under the ranunculus aquaticus when in flower, and which floats on the surface; they will sometimes be found in the termination of sharp currents: from March to the end of May they resort to back waters that have direct communication with the main stream: as winter approaches they retire into the deeps, under clay banks, bushes impending over the water, stumps and roots of trees, piles of bridges, and flood-gates. They spawn in March or April, according to the coldness or warmth of the weather, quitting the rivers for the creeks and ditches communicating with them, and there dropping their ova in the grass and reeds; in ponds they choose the weeds upon the shallows for depositing it; ducks and other wild fowl eagerly devour the spawn, and by them it is transported to other waters. The appearance of the Pike in ponds, where none were ever put, has been deemed as extraordinary as its asserted longevity; it is, however, easily accounted for, upon the well-known principles of the generation of fishes: if a heron has devoured their ova, and afterwards ejected them, while feeding in one of these ponds, it is highly probable that they may be produced from this original, in the same way as the seeds of plants are known to be disseminated.

Pike are in season from May to February, (the female fish are to be preferred;) are bold biters, afford the angler good sport, and may be fished for all the year; but the best months, (especially for trolling,) are February, before the weeds shoot, and October, when they are rotted; the latter is to be preferred, as the Pike are fattened by their feed during the summer, and from the lowness of the waters, their harbours are easily discovered.

For trolling, the rod should be twelve or fourteen feet long; but a strong top for this fishing, with a ring at the end for the line to run through, may be fitted to a fly or general rod; there should be one ring upon each joint to conduct the line, which is better than a greater number, (and these rings must be set on straight, that it may run freely, so that no sudden check after the bait is taken prevent the Pike from gorging it:) the line should be of silk, with a swivel at the end to receive the armed wire or gimp, and at least thirty yards long, wound upon a winch or reel, fixed to the butt end of the rod, hooks for trolling, called dead gorges, and other sorts for trolling, snap, and trimmer, and fishing needles, are to be bought at every shop where fishing-tackle is sold; in the choice of the first, let them not be too large, nor their temper injured by the lead on the shanks, nor the points stand too proud; and, although usually sold on wire, it is recommended to cut off the wire about an inch from the lead, and with double silk, well waxed, fasten about a foot of good gimp to the wire, with a noose at the other end of the gimp, large enough to admit the bait to pass through, to hang it upon the line. The best baits are gudgeons or dace, of a middling size; put the baiting-needle in at the mouth, and out at the middle of the tail, drawing the gimp and hook after it, fixing the point of the hook near the eye of the fish; tie the tail to the gimp, which will not only keep it in a proper position, but prevent the tail from catching against weeds and roots in the water: thus baited, the hook is to be fastened to the line, and dropt gently in the water, near the sides of the river, across the water, or where it is likely Pike resort; keep the bait in constant motion, sometimes letting it sink near the bottom, and gradually raising it; the angler need not make more than two or three trials in a place, for if a Pike be there, he will within that time bite, if he means to do so: when the bait is taken, if at a depth too great to see, it will easily be ascertained by the line being drawn tight, and by some resistance: let the Pike have what line he chooses, it will be soon known when he has reached his harbour by his not drawing more; allow from five to ten minutes for his gorging the bait; wind up the line gently until the Pike is seen, (which he will permit, though he has not gorged:) should the bait be across his mouth, give more time; but if he has swallowed, manage him with a gentle hand, keeping him, however, from roots and stumps, which he will try to fasten the line upon; in clear water veer out line until he is sufficiently tired, and a landing net can be used; but by no means, however apparently

exhausted, attempt to lift him out with the rod and line only; for the moment he quits the water, he will open his mouth, and from his own weight, tear the hook from his stomach; and the fish will be lost to the angler, although it must inevitably perish.

In trolling, the bait should never be thrown too far: in small rivers the opposite bank may be fished with ease, and the violence of its fall upon the water, in extensive throws, soon spoils the bait, by rubbing off its scales, and alarms the Pike, instead of enticing him.

The bead hook is used by putting the lead into the mouth of the live bait and sewing it up; the fish will live some time, and, notwithstanding the lead, will swim with the support he receives from the line, with nearly the same ease as if at liberty: this is the most successful way of tempting the Pike.

Pike are to be allured by a large bait, but a small one is more certain to take them: never suffer weeds to hang upon the hook or bait when reeast into the water, and which cannot touch the surface too softly. Always prefer a rough wind, and when the stream is clear for trolling: Pike never bite in white water after rain, &c. If a Pike goes slowly up the stream after taking the bait, it is said to be a signal of a good fish.

The next Pike in size to the foregoing, taken by the troll, was in December, 1792, by Mr. Bint, in the pool at Packinton, (the Earl of Aylesford's,) being from eye to fork two feet eleven, full length three feet ten and a half; circumference one foot ten inches, and weighed thirty-four pounds and three-quarters.

In 1804 a Pike was taken out of the same water, with a carp, that weighed ten pounds, stuck in his throat, and which had choked him. The Pike when empty was thirty pounds weight.

Mr. Wilson caught a Pike by trolling in the Driffield Canal, near Brigham, which weighed twenty-eight pounds, measured two feet round the belly, and three feet five inches in length; and what was singular, five pounds of solid fat were taken out of his inside.

Sir Cecil Wray's Pike, caught in June, 1799, at the draining off the water from the lake at his seat at Summer Castle, in Lincolnshire, weighed forty-seven pounds gross, thirty-six pounds, after being cleaned, of eatable meat; was forty-eight and a half inches long, and two feet two inches in circumference: this fish must have got into the lake when very small, and had acquired this enormous size in twenty-two years; for at that time the lake was laid dry. Sir Cecil computes that he consumed three fish per diem, progressively larger as his own size increased, and that he at least destroyed 24,000; all of which, in the latter years of his growth, must have been valuable

fish; so that the cost of his support exceeded, by some hundred times, his own value. A river Pike grows fast until he arrives at twenty-four inches; he then ceases to extend so rapidly in length; (for, in good water, with plenty of feed, a Pike spawned in March, will, by the March following, be grown from sixteen to eighteen inches,) and proportionably thickens; afterwards he will be much longer arriving at his full bigness, (which is about forty-six inches) from the length of thirty, than he was in acquiring the first thirty inches.

In May, 1706, Mr. Bishop of Godstow, between Weir and Wytham Brook, landed the largest Pike ever remembered to be taken in the Isis; it was four feet two inches long, two feet ten in girth, and, after being disgorged of a barbel nearly six, and a chub upwards of three pounds, weighed thirty-one pounds and a half.

In June, 1796, a male Pike was caught in Exton Park pond, (Lord Gainsborough's,) the length forty-two and a half from eye to fork, and from nose to tail forty-nine inches; the girth twenty-eight inches, and weighed thirty-seven pounds and a quarter. Neither this, nor the fish taken in the Isis, was so well grown as Sir Cecil Wray's.

In 1797, a Pike, weighing near forty pounds, and measuring in length three feet six, and in girth two feet, was caught in a pond at Totteridge, in Hertfordshire; a tench of four pounds, and four pounds and a half of solid fat, were taken from his inside.

In Munden Hall Fleet, a Pike was found that had been killed by a very long frost; in its putrid state it weighed forty-two pounds, but had wasted considerably; was three feet six inches long, and two feet nine inches in girth; the teeth were nearly as long, though not so stout, as those of a greyhound: the head of this fish was dried with the skin on, and long preserved at the hall as a great curiosity, not only on account of its immense size, but from a peculiarity in the lower jaw, which had bristles like those growing on the breast of a turkey-cock, proceeding from the under part of it. This head was given to the Rev. Mr. Kay, of South Bemfleet, in Essex, by Mr. Lugar; and from Mr. K.'s house some friendly collector of natural curiosities took the opportunity of marching off with it, during a very severe illness with which that gentleman was afflicted in the year 1792.

In some places Pike are taken by what is termed dipping; the hook used is a large sized gorge hook, very slightly leaded on the shank, and baited as in trolling, only the mouth of the fish is to be sewed up, and the back fin cut away, and then looped to the swivel; the line is let out from the reel to a convenient length, and the bait is dropped in any small openings where the water is not

very deep, and overspread with docks and weeds. The fish hanging with his head downwards, will, when gently moved, (and all baits, especially dead ones, should be kept in constant motion,) shoot and play about among the weeds so naturally, that the Pike will be eager in taking it this way, even from the surface: when the bait is seized, the line is to be slackened, and the Pike allowed like to run; in a short time it will be perceived to shake, which is a signal to strike; when hooked, he must be cautiously managed, winding up the line gradually: in getting the Pike through the weeds, endeavour to keep his nose above them, and use the landing-net in taking him from the water. In this method the baits must be as fresh as possible.

For snap-fishing, (which is best used in March, the Pike being then very shy of gorging, although with seeming eagerness they seize the bait,) should the rod be purposely made for it, the length should be about twelve feet; if a common rod is employed, the top should be stouter than that used in trolling, with a strong loop to fasten the line upon, which must be a foot shorter than the rod: for the live snap, no hook is so proper as the double spring hook: to bait it, nothing more is requisite than to hang the fish to the small hook under the back fin, which may be done with so little hurt to the fish that it will live for many hours. Gudgeons, (which, in all modes of Pike-fishing, are superior to any other,) and dace are the best baits; they must be kept alive in a tin kettle, with holes in the lid, and which in hot weather should be placed in the water.

The other live snap-hook is baited by the small hook being thrust through the fish beneath the back fin; and some use a piece of silk or thread doubled, hung on the point of the small hook, and brought under the belly of the bait, and tied on the other side to the shanks of the large hooks; care and expedition are required in doing this, otherwise the bait will be so injured as to be incapable of swimming briskly in the water: a cork float, the size of a common burgamot pear, with a small pistol bullet or two, not only to poise, but to keep the bait at a proper depth, which is from two to three feet. If a Pike be near where the bait is put in, it will come to the surface, or increase the quickness of its motion to avoid him; these signs will put the angler on his guard: when the float is drawn under, allow it to be sunk considerably before striking, which, in all snap-fishing should be with a smart stroke, and directly contrary to the course the Pike appears to take; the line must be kept tight, and the landing-net should be used, as the throwing out a large Pike by force will certainly strain the sockets of the rod.

Some use only one large long-shanked hook, whipped to gimp, with a swivel at the upper end; the hook baited with a gudgeon under the back fin, or through the upper lip, with a float as above, that will swim the gudgeon; fish at mid-water, and allow a minute after the float is sunk before striking: by this method perch may be taken, if the bait be a minnow or very small gudgeon.

A variety of hooks are used for the dead snap; and this mode of catching Pike is well adapted to both shallow and deep waters, to the still rapid parts of the river, will take Pike at all seasons of the year, supposing the water and weather favourable; and it will be no trifling recommendation that the idea of cruelty, which the use of a live fish naturally impresses, is, by this substitute, completely removed. The rod should be longer than that for trolling; the line fine, strong, and twenty yards in length; the hook by some most preferred is like that for a common live snap; the length of the gimp, on which the hook is tied, should be regulated by the size of the bait, and should be rather longer than the distance from the back fin to the mouth; that the looped end may be hung on a strong swivel, tied neatly to about a foot more of gimp, with a noose at the other end, to hang it upon the line, fastening a piece of lead, of the shape of a barley-corn, and weighing about an ounce, with a hole through it, about two inches above the swivel. The bait should be a middle sized dace: insert the baiting needle close behind the back fin, letting it come out of the mouth; draw the gimp to which the hook is tied after it; the short hook must stand with the point upright behind the back fin; the others will consequently be on each side; then hang it upon the swivel, and try if it will spin: if it does not, move the bait a little to the right or left, which may be done without moving it from the hook: the whole success depends on its quick turning when drawn against the stream; and when it does, it appears like a fish unable to escape, and becomes too tempting a morsel for the Pike to resist: this method will not only enable the angler to fish a greater extent of water than the others, but is more certain to secure the Pike. The large ones, though bold in seizing the bait, are very cautious in gorging it: most trollers have experienced, that, after running out a considerable length of line, the bait has been mumbled to pieces and deserted; a disappointment here remedied, for a Pike has but to seize the bait, and he is caught.

At both troll and snap, some persons have two or more swivels to their line; by which means its twisting is prevented, the bait plays more freely, and to the dead bait in rivers it certainly is an improvement: in ponds or still waters one will answer the purpose.

Another way of taking the Pike is with an artificial fly: many have asserted that they are not to be caught at all with a

fly; but, as a convincing proof to the contrary, a Pike the largest taken by a line, or perhaps ever known in this country, was caught in Lock Ken, near New Galloway, in Scotland, with a common fly, made of the peacock feather; it weighed seventy-two pounds; the skeleton of the head is at Kenmore Castle; the jaw at the top is that of a Pike, weighing twenty-five pounds: a scale is annexed by which the respective proportions of the two may be ascertained, and which will convey some idea of the largest Pike ever seen in Great Britain.

The Pike fly must be made upon a double hook, fastened to a good link of gimp, and composed of very gaudy materials; such as pheasant's, peacock's, or mallard's feathers; the brown and softest part of bear's fur; the reddish part of that of a squirrel, with some yellow mohair for the body. The head is formed of a little fur, some gold twist, and two small black or blue beads for the eye; the body must be framed rough, full, and round; the wings not parted, but to stand upright on the back, and some smaller feathers continued thence all down the back, to the end of the tail; so that, when finished, they may be left a little longer than the hook, and the whole to be about the size of a wren. A fly thus made will often take Pike, when other baits are of no avail, especially in dark windy days; the fly must be moved quick when in the water, and kept on the surface if possible. Several sorts of these flies are to be had at all the fishing-tackle shops.

Pike are also taken with a live bait, fixed to a certain place, termed a ledger bait: if a fish is to be used, the hook is to be run through the upper lip or back fin; if a frog, (of which the yellowest are the best,) the arming wire is to be put in at the mouth, and out at the gill, and tie the leg above the upper joint to the wire; fasten the wire to a strong line, about twelve or fourteen yards long; the other end being made fast to a stake or stump of a tree, a forked stick is to be placed near the surface, through which the line is to pass, and suspend the bait about a yard in the water, by a notch made in the fork; but which, when the bait is taken, will easily slip out; but the best way is to have a wheel, or an iron spindle, to stick into the ground.

Huxing Pike is, with large bladders, blown up and tied close; at the mouth of each fasten a line, (longer or shorter according to the water's depth,) with an armed hook baited; launch them with the advantage of the wind to move up and down the pool: a boat will be necessary in this diversion.

Huxing Pike is also done by fixing an armed hook baited, at such a length as to swim about mid-water, to the leg of a goose or duck, and then driving the birds into the water. It was thus formerly practised in the Loch of Monteith, in Scotland, which abounds with very large perch and pike. "Upon these islands a number of geese were collected by the farmers, who occupied the surrounding banks of the loch: after baited lines of two or three feet long had been tied to the legs of their geese, they were driven into the water; steering naturally homewards, in different directions, the baits were soon swallowed: a violent and often tedious struggle ensued; in which, however, the geese at length prevailed, though they were frequently much exhausted before they reached the shore." This method has not been so long relinquished, but there are old persons upon the spot who were active promoters of the amusement.

Trimmers of two sorts may be described; the one is made of flat cork, or any light wood, painted, to be seven or eight inches diameter, turned round with a groove in the edge, large enough to receive a fine whipcord or silk line, twelve or fourteen yards, or at least five yards longer than the depth of the water: a small peg, two inches long, is fixed in the centre, with the end slit; and a small double hook fixed to a brass wire link is to be used. Insert the baiting needle under the side fin of the bait, (for which large gudgeons are superior to all others,) and keep it just within the skin of the side; bring it out beyond the back fin, drawing the wire after it, and the hook, when drawn home, will be partly covered by the side fin. This method, performed carefully, will preserve the fish alive for many hours longer than any other; one end of the line is of course fixed to the cork, the other to the loop in the wire; the line is then slightly put into the slit of the peg, to keep the bait at a proper depth, (from three to four feet, which is more likely to attract the Pike's notice than if laid deeper, or nearer the surface,) and to prevent its untwisting the line out of the groove. The trimmer should always be started on the windward side of the pond, and the rougher the water the better sport; if not seized in one trip, it must be taken up and re-started from the windward side again.

The other trimmers are also of cork, and are to be baited and used as above; their form is adapted to go easily through weeds when taken by the Pike; after the line is run off, they will follow in the shape of a wedge, and will not long be kept from appearing on the surface in the weediest places: a hole is burnt through one corner of the cork, by which, with a cord, it may be made stationary to the side of any water; and which method is sometimes preferred where a boat cannot be readily commanded. No species of fishing does more execution than this: in windy weather, at all seasons of the year, and both day and night, the trimmer presents itself as to the most deadly foe the Pike can encounter.

Pike, in clear water and a gentle gale, from the middle of summer to the latter end of autumn, bite best about three in the afternoon; in the winter, during the whole day; and in the spring, most eagerly in the morn, and late at eve.—*Sportsman's Cyclopedia.*

THE LEECH,

From its uses in medicine, is one of those insects that man has taken care to propagate; but, of a great variety, one kind only is considered as serviceable. The HORSE LEECH, which is the largest of all, and grows to four inches in length, with a glossy black surface, is of no use, as it will not stick to the skin; the SNAIL LEECH is but an inch in length; and though it will stick, is not large enough to extract a sufficient quantity of blood from the patient; the BROAD-TAILED LEECH, which grows to an inch and a half in length, with the back raised into a sort of a ridge, will stick but on very few occasions; it is the large BROWN LEECH with a whitish belly, that is made use of in medicine, and whose history best merits our curiosity.

The Leech has the general figure of a worm, and is about as long as one's middle finger. Its skin is composed of rings, by means of which it is possessed of its agility, and swims in water. It contracts itself when out of water, in such a manner, that, when touched, it is not above an inch long. It has a small head, and a black skin, edged with a yellow line on each side, with some yellowish spots on the back. The belly, also, which is of a reddish colour, is marked with whitish yellow spots. But the most remarkable part of this animal is the mouth, which is composed of two lips, that take whatever form the insect finds convenient. When at rest, the opening is usually triangular; and within it are placed three very sharp teeth, capable of piercing not only the human skin, but also that of a horse or an ox. Still deeper in the head is discovered the tongue, which is composed of a strong fleshy substance, and which serves to assist the animal in sucking, when it has inflicted its triple wound; for no sooner is this voracious creature applied to the skin, than it buries its teeth therein, then closes its lips round the wound which it has made; and thus, in the manner of a cupping-glass, extracts the blood as it flows to the different orifices.

In examining this animal's form farther towards the tail, it is seen to have a gullet, and an intestinal canal, into which the blood flows in great abundance. On each side of this are seen running along several little bladders, which, when the animal is empty, seem to be filled with nothing but water; but when it is gorging blood, they seem to communicate with the intestines, and receive a large portion of the blood which flows into the body. If these bladders should be considered as so many stomachs, then every Leech will be found to have twenty-four. But what is most extraordinary of all in this animal's formation is, that, though it takes so large a quantity of food, it has no anus or passage to eject it from the body when it has been digested. On the contrary, the blood which the Leech has thus sucked remains for several months clotted within its body, blackened a little by the change, but no way putrefied, and very little altered in its texture or consistence. In what manner it passes through the animal's body, or how it contributes to its nourishment, is not easily accounted for. The water in which they are kept is very little discoloured by their continuance; they cannot be supposed to return the blood by the same passage through which it was taken in; it only remains, therefore, that it goes off through the pores of the body, and that these are sufficiently large to permit its exclusion.

But it is not in this instance alone that the Leech differs from all other insects. It was remarked in a former section, that the whole insect tribe had the opening into their lungs placed in their sides; and that they breathed through those apertures as other animals through the mouth. A drop of oil poured on the sides of a wasp, a bee, or a worm, would quickly suffocate them, by stopping up the passages through which they breathe; but it is otherwise with the Leech, for this animal may be immersed in oil without injury; nay, it will live therein; and the only damage it will sustain is, that when taken out, it will be seen to cast a fine pellucid skin, exactly of the shape of the animal, after which it is as alert and vigorous as before. It appears from this, that the Leech breathes through the mouth; and, in fact, it has a motion that seems to resemble the act of respiration in more perfect animals; but concerning all this we are very much in the dark.

This Leech is viviparous, and produces its young one after the other, to the number of forty or fifty at a birth. It is probable, that, like the snail, each insect contains the two sexes, and that it impregnates, and is impregnated, in the same manner. The young ones are chiefly found in the month of July, in shallow running waters, and particularly where they are tepified by the rays of the sun. The large ones are chiefly sought after; and, being put into a glass vessel filled with water, they remain for months, nay, for years, without taking any other subsistence. But they never breed in this confinement; and con-

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Drawn on Stone from Nature by J.G Clonney

FLICKER, OR GOLDEN-WINGED WOODPECKER.

sequently, what regards that part of their history still remains obscure.

In America and the east they are found from six to seven inches in length. Their pools there abound with them in such numbers, that it would be dangerous bathing there, if from no other consideration. Even in some parts of Europe they increase so as to become formidable. Sedelius, a German physician, relates, that a girl of nine years old, who was keeping sheep near the city of Bomst, in Poland, perceiving a soldier making up to her, went to hide herself in a neighbouring marsh, among some bushes; but the number of Leeches was so great in that place, and they stuck to her so close, that the poor creature expired from the quantity of blood which she lost by their united efforts. Nor is this much to be wondered at, since one of these insects of a large size, will draw about an ounce of blood.

When Leeches are to be applied, the best way is to take them from the water in which they are contained, about an hour before, for they thus become more voracious, and fasten more readily. When saturated with blood, they generally fall off of themselves; but if it be thought necessary to take them from the wound, care should be used to pull them very gently, or even to sprinkle them with salt, if they continue to adhere; for if they be plucked rudely away, it most frequently happens that they leave their teeth in the wound, which makes a very troublesome inflammation, and is often attended with danger. If they be slow in fixing to the part, they are often enticed by rubbing it with milk, or blood, or water mixed with sugar. As salt is poison to most insects, many people throw it upon the Leech when it has dropped from the wound, which causes it to disgorge the blood it has swallowed, and it is then kept for repeated application. They seldom, however, stick after this operation; and, as the price is but small, fresh Leeches should always be applied whenever such an application is thought necessary.

BUFFON.

FLICKER,

OR GOLDEN-WINGED WOODPECKER.

PICUS AURATUS.

[Plate XVI. Vol. 2. on a branch of Sour Gum.]

Le Pic aux ailes dorées, BUFFON, VII. 39. *Pl. Enl.* 693.—*Picus auratus*, LINN. *Syst.* 174.—*Cuculus alis de auratis*, KLEIN, *p.* 30.—CATESBY, I. 18.—LATHAM, II. 597.—BARTRAM, *p.* 289.—*Cuculus auratus*, LINN. *Syst. ed.* 10, 1, 112.—GMEL. *Syst.* I. 430.—LATH. *Ind. Orn. p.* 242.—*Picus Canadensis striatus*, BRISS. IV. 72.—PENN. *Arct. Zool. No.* 158.—J. DOUGHTY'S Collection.

THIS elegant bird is well known to our farmers and junior sportsmen, who take every opportunity of destroying him; the former for the supposed trespasses he commits on their Indian corn, or the trifle he will bring in market, and the latter for the mere pleasure of destruction, and perhaps for the flavour of his flesh, which is in general esteem. In the State of Pennsylvania he can scarcely be called a bird of passage, as even in severe winters they may be found within a few miles of the city of Philadelphia; and I have known them exposed for sale in market every week during the months of November, December, and January, and that too in more than commonly rigorous weather. They, no doubt, partially migrate, even here; being much more numerous in spring and fall than in winter. Early in the month of April they begin to prepare their nest, which is built in the hollow body or branch of a tree, sometimes, though not always, at a considerable height from the ground; for I have frequently known them fix on the trunk of an old apple tree, at not more than six feet from the root. The sagacity of this bird in discovering, under a sound bark, a hollow limb or trunk of a tree, and its perseverance in perforating it for the purpose of incubation, are truly surprising; the male and female alternately relieving and encouraging each other by mutual caresses, renewing their labours for several days, till the object is attained, and the place rendered sufficiently capacious, convenient and secure. At this employment they are so extremely intent, that they may be heard till a very late hour in the evening, thumping like carpenters. I have seen an instance where they had dug first five inches straight forwards, and then downwards more than twice that distance, through a solid black oak. They carry in no materials for their nest, the soft chips, and dust of the wood, serving for this purpose. The female lays six white eggs, almost transparent. The young early leave the nest, and, climbing to the higher branches, are there fed by their parents.

The food of this bird varies with the season. As the common cherries, bird-cherries, and berries of the sour gum, successively ripen, he regales plentifully on them, particularly on the latter; but the chief food of this species, or that which is most usually found in his stomach, is wood-lice, and the young and larvæ of ants, of which he is so immoderately fond, that I have frequently found

his stomach distended with a mass of these, and these only, as large nearly as a plum. For the procuring of these insects, nature has remarkably fitted him. The bills of Woodpeckers, in general, are straight, grooved or channelled, wedge-shaped, and compressed to a thin edge at the end, that they may the easier penetrate the hardest wood; that of the Golden-winged Woodpecker is long, slightly bent, ridged only on the top, and tapering almost to a point, yet still retaining a little of the wedge form there. Both, however, are admirably adapted to the peculiar manner each has of procuring its food. The former, like a powerful wedge, to penetrate the dead and decaying branches, after worms and insects; the latter, like a long and sharp pick-axe, to dig up the hillocks of pismires, that inhabit old stumps in prodigious multitudes. These beneficial services would entitle him to some regard from the husbandman, were he not accused, and perhaps not without just cause, of being too partial to the Indian corn, when in that state which is usually called *roasting-ears*. His visits are indeed rather frequent about this time; and the farmer, suspecting what is going on, steals through among the rows with his gun, bent on vengeance, and forgetful of the benevolent sentiment of the poet;—that

> "——— Just as wide of *justice* he must fall
> Who thinks all made for One, not one for all."

But farmers, in general, are not much versed in poetry, and pretty well acquainted with the value of corn, from the hard labour requisite in raising it.

In rambling through the woods one day, I happened to shoot at one of these birds, and wounded him slightly in the wing. Finding him in full feather, and seemingly but little hurt, I took him home, and put him into a large cage, made of willows, intending to keep him in my own room, that we might become better acquainted. As soon as he found himself inclosed on all sides, he lost no time in idle fluttering, but throwing himself against the bars of the cage, began instantly to demolish the willows, battering them with great vehemence, and uttering a loud piteous kind of cackling, similar to that of a hen when she is alarmed, and takes to wing. Poor Baron Trenck never laboured with more eager diligence at the walls of his prison, than this son of the forest in his exertions for liberty; and he exercised his powerful bill with such force, digging into the sticks, seizing and shaking them so from side to side, that he soon opened for himself a passage; and though I repeatedly repaired the breach, and barricadoed every opening in the best manner I could, yet on my return into the room, I always found him at large, climbing up the chairs, or running about the floor, where, from the dexterity of his motions, moving backwards, forwards, and sideways, with the same facility, it became difficult to get hold of him again. Having placed him in a strong wire cage, he seemed to give up all hopes of making his escape, and soon became very tame; fed on young ears of Indian corn; refused apples, but ate the berries of the sour gum greedily, small winter grapes, and several other kinds of berries; exercised himself frequently in climbing, or rather hopping perpendicularly along the sides of the cage; and as evening drew on, fixed himself in a high hanging or perpendicular position, and slept with his head in his wing. As soon as dawn appeared, even before it was light enough to perceive him distinctly across the room, he descended to the bottom of the cage, and began his attack on the ears of Indian corn, rapping so loud as to be heard from every room in the house. After this he would sometimes resume his former position, and take another nap. He was beginning to become very amusing, and even sociable, when, after a lapse of several weeks, he became drooping, and died, as I conceived, from the effects of his wound.

Some European naturalists, (and among the rest Linnæus himself, in his tenth edition of the Systema Naturæ,) have classed this bird with the genus Cuculus, or Cuckoo, informing their readers that it possesses many of the habits of the Cuckoo; that it is almost always on the ground; is never seen to climb trees like the other Woodpeckers, and that its bill is altogether unlike theirs; every one of which assertions I must say is incorrect, and could have only proceeded from an entire unacquaintance with the manners of the bird. Except in the article of the bill, and that, as has been before observed, is still a little wedge-formed at the point, it differs in no one characteristic from the rest of its genus. Its nostrils are covered with tufts of recumbent hairs or small feathers; its tongue is round, worm-shaped, flattened towards the tip, pointed, and furnished with minute barbs; it is also long, missile, and can be instantaneously protruded to an uncommon distance. The os hyoides, or internal parts of the tongue, like those of its tribe, is a substance for strength and elasticity, resembling whalebone, divided into two branches, each the thickness of a knitting-needle, that pass, one on each side of the neck, to the hind-head, where they unite, and run up along the scull in a groove, covered with a thin membrane or sheath; descend into the upper mandible by the right side of the right nostril, and reach to within half an inch of the point of the bill, to which they are attached by another extremely elastic membrane, that yields when the tongue is thrown out, and contracts as it is retracted. In the other Woodpeckers we behold the same apparatus,

differing a little in different species. In some these cartilaginous substances reach only to the top of the cranium; in others they reach to the nostril; and in one species they are wound round the bone of the right eye, which projects considerably more than the left for its accommodation.

The tongue of the Golden-winged Woodpecker, like the others, is also supplied with a viscid fluid, secreted by two glands, that lie under the ear on each side, and are at least five times larger in this species than in any other of its size; with this the tongue is continually moistened, so that every small insect it touches instantly adheres to it. The tail, in its strength and pointedness, as well as the feet and claws, prove that the bird was designed for climbing; and in fact I have scarcely ever seen it on a tree five minutes at a time without climbing; hopping not only upwards and downwards, but spirally; pursuing and playing with its fellow, in this manner, round the body of the tree. I have also seen them a hundred times alight on the trunk of the tree; though they more frequently alight on the branches; but that they climb, construct like nests, lay the same number, and the like coloured eggs, and have the manners and habits of the Wookpeckers, is notorious to every American naturalist; while neither in the form of their body, nor any other part, except in the bill being somewhat bent, and the toes placed two before, and two behind, have they the smallest resemblance whatever to the Cuckoo.

It may not be improper, however, to observe, that there is another species of Woodpeckers, called also Golden-winged, which inhabits the country near the Cape of Good Hope, and resembles the present, it is said, almost exactly in the colour and form of its bill, and in the tint and markings of its plumage; with this difference, that the mustaches are red instead of black, and the lower side of the wings, as well as their shafts, are also red, where the other is golden yellow. It is also considerably less. With respect to the habits of this new species, we have no particular account; but there is little doubt that they will be found to correspond with the one we are now describing.

The abject and degraded character which the count de Buffon, with equal eloquence and absurdity, has drawn of the whole tribe of Woodpeckers, belongs not to the elegant and sprightly bird now before us. How far it is applicable to any of them will be examined hereafter. He is not "constrained to drag out an insipid existence in boring the bark and hard fibres of trees to extract his prey," for he frequently finds in the loose mouldering ruins of an old stump, (the capital of a nation of pismires,) more than is sufficient for the wants of a whole week. *He* cannot be said to "lead a mean and gloomy life, without an intermission of labour," who usually feasts by the first peep of dawn, and spends the early, and sweetest hours of morning, on the highest peaks of the tallest trees, calling on his mate or companions; or pursuing and gamboling with them round the larger limbs, and body of the tree, for hours together; for such are really his habits. Can it be said that "necessity never grants an interval of sound repose" to that bird, who, while other tribes are exposed to all the peltings of the midnight storm, lodges dry and secure in a snug chamber of his own constructing? or that "the narrow circumference of a tree circumscribes *his* dull round of life," who, as seasons and inclination inspire, roams from the frigid to the torrid zone, feasting on the abundance of various regions? Or is it a proof that "his appetite is never softened by delicacy of taste," because he so often varies his bill of fare, occasionally preferring to animal food the rich milkiness of young Indian corn, and the wholesome and nourishing berries of the Wild Cherry, Sour Gum, and Red Cedar? Let the reader turn to the faithful representation of him given in the plate, and say whether his looks be "sad and melancholy!" It is truly ridiculous and astonishing that such absurdities should escape the lips or pen of one so able to do justice to the respective merits of every species; but Buffon had too often a favourite theory to prop up, that led him insensibly astray; and so, forsooth, the whole family of Woodpeckers must look sad, sour, and be miserable, to satisfy the caprice of a whimsical philosopher, who takes it into his head that they are, and ought to be so.

But the count is not the only European who has misrepresented and traduced this beautiful bird. One has given him brown legs, another a yellow neck; a third has declared him a Cuckoo, and in an English translation of Linnæus' System of Nature, lately published, he is characterized as follows: "transversely striate with black and gray; chin and breast black; does not climb trees;" which is just as correct as if, in describing the human species, we should say—skin striped with black and green; cheeks blue; chin orange; never walks on foot, &c. The pages of natural history should resemble a faithful mirror, in which mankind may recognize the true images of the living originals; instead of which we find this department of them, too often, like the hazy and rough medium of wretched window glass, through whose crooked protuberances every thing appears so strangely distorted, that one scarcely knows their most intimate neighbours and acquaintance.

The Golden-winged Woodpecker has the back and wings above of a dark umber, transversely marked with equidistant streaks of black; upper part of the head an

iron gray; cheeks and parts surrounding the eyes, a fine cinnamon colour; from the lower mandible a strip of black, an inch in length, passes down each side of the throat, and a lunated spot, of a vivid blood red, covers the hind-head, its two points reaching within half an inch of each eye; the sides of the neck, below this, incline to a bluish gray; throat and chin a very light cinnamon or fawn colour; the breast is ornamented with a broad crescent of deep black; the belly and vent white, tinged with yellow, and scattered with innumerable round spots of black, every feather having a distinct central spot, those on the thighs and vent being heart-shaped and largest; the lower and inner side of the wing and tail, shafts of all the larger feathers, and indeed of almost every feather, are of a beautiful golden yellow—that on the shafts of the primaries being very distinguishable, even when the wings are shut; the rump is white, and remarkably prominent; the tail-coverts white, and curiously serrated with black; upper side of the tail, and the tip below, black, edged with light loose filaments of a cream colour, the two exterior feathers serrated with whitish; shafts black towards the tips, the two middle ones nearly wholly so; bill an inch and a half long, of a dusky horn colour, somewhat bent, rigdid only on the top, tapering, but not to a point, that being a little wedge-formed; legs and feet light blue; iris of the eye hazel; length twelve inches; extent twenty. The female differs from the male chiefly in the greater obscurity of the fine colours, and in wanting the black mustaches on each side of the throat. This description, as well as the drawing, was taken from a very beautiful and perfect specimen.

Though this species, generally speaking, is migratory, yet they often remain with us in Pennsylvania during the whole winter. They also inhabit the continent of North America, from Hudson's Bay to Georgia; and have been found, by voyagers, on the north-west coast of America. They arrive at Hudson's Bay in April, and leave it in September. Mr. Hearne, however, informs us, that "the Golden-winged Woodpecker is almost the only species of Woodpecker that winters near Hudson's Bay." The natives there call it *Ou-thee-quan-nor-ow*, from the golden colour of the shafts and lower side of the wings. It has numerous provincial appellations in the different states of the Union, such as "High-hole," from the situation of its nest, and "Hittock," "Yucker," "Piut," "Flicker," by which last it is usually known in Pennsylvania. These names have probably originated from a fancied resemblance of its notes to the sound of the words; for one of its most common cries consists of two notes or syllables, frequently repeated, which, by the help of the hearer's imagination, may easily be made to resemble any or all of them.—Wilson.

From the New-York Commercial Advertiser.

SCENES ON THE UPPER MISSOURI.

Since I wrote you my last letter, I have been so much engaged in the amusements of the country, and in the use of my pencil, that I have been unable to drop you a line until the present moment. Before I let you into the pleasures and amusements of this delightful country, however, I must hastily travel with you over the tedious journey of 2000 miles, from St. Louis, over which distance one is obliged to pass before he reaches this place. The Missouri is, perhaps, different from all other rivers in the world. There is a *terror* in its waters which we sensibly feel the moment we enter into it from the Mississippi. From the mouth of the Yellow Stone to the mouth of the Missouri, it sweeps off in one unceasing current, and in the whole distance there is scarcely a resting place. Owing to the continual falling of its alluvial banks, its water is always turbid and opaque, having more the appearance, (in colour,) of a cup of chocolate than any thing else I can think of. I have made experiments with a piece of silver, and also with a shell, which is a much whiter substance, and have ascertained that they cannot be discovered through the sixteenth part of an inch of the water. For the distance of about 1000 miles from St. Louis, the shores of the river, and in many places the whole bed of the stream are filled with snags, trees of the largest size, which have been undermined by the falling banks, their roots becoming fastened in the bottom of the river, and tops pointing down the stream, form a most frightful and discouraging prospect for the adventurous voyagers. Almost every island and sand bar is covered with huge piles of these floating trees; and when the river is high it is almost impossible for the boat to proceed, in consequence of the continued rafts of this material, which almost literally cover the surface of the water. With what propriety we might call it the "River Styx," I will not undertake to say, but nothing could be more appropriate than to denomin..te it the "River *of Sticks*." The scene is not all so dreary, for the eye is delightfully relieved the moment you glance it over the beautiful prairie, most of the way gracefully sloping down to the water's edge, carpeted with the deepest green, and in distance softening into velvet of the richest hues, entirely beyond the reach of the artist's pencil. It has heretofore been very erroneously represented in the world, that the scenery on this river was monotonous, and wanting in picturesque beauty. This intelligence, I find, has come altogether from a set of men, who, if they had been capable of relishing the beauties of nature, would have passed them in this place without no-

ticing them, for every moment they are trembling for the safety of their peltries, &c., or for their lives, which are at the mercy of the yelling savages who inhabit this delightful country.

One thousand miles or more of the upper part of the river was to my eye like "fairy land." I was the whole time riveted to the deck of the boat, from which I beheld with rapture the changing scenes of every moment. I cannot so well describe with pen as with my pencil, and have therefore filled my Port Folio with sketches, which it may eventually amuse you to look over. The whole face of the country, from St. Louis to the Falls of the Missouri, (six hundred miles above the mouth of Yellow Stone,) is one continued prairie, except the bottoms formed along the river, and the streams which empty into it, which are covered with the most luxuriant growth of forest timber. The surface-level of the prairie is from 200 to 300 feet above the level of the river, forming a valley the whole way for the river, varying in width from two to twenty miles. The river is alternately running from one bluff to another, which present themselves to its shores in all the most picturesque and beautiful shapes and colours imaginable. Some with their green sides gracefully slope down, in the most beautiful groups, to the water's edge; whilst others, divested of their verdure, present themselves in many masses of clay of different colours, some standing in the most perfect forms of huge domes, cupolas, turrets, towers, and ruined castles. In distance, some of those groups have the appearance of ancient cities in ruins, with solitary standing columns, falling domes, and ruined edifices. It is amidst these wild haunts that the mountain sheep and the fleet-bounding antelope sport in herds, secure in these rude places, which are inaccessible to their enemies.

If any thing did ever literally "astonish the natives," it was the approach of the steamboat alongside of their villages. They were astonished, and thousands of them dropped themselves upon the shore, viewing it with wonder and astonishment. Some called it the "Fire Boat," others called it the "Medicine Boat, with eyes," for they declared it saw its own way, and went along without help. At this place, from which I am writing, the American Fur Company have a very strong fort, well piquetted, and protected with bastions mounting cannon. This fort was built by, and is now in charge of Mr. McKenzie, who receives all the trades of the northern and western Missouri Indians. This post, and the posts and Indian villages which I shall visit on my way down the river, will enable me to get my sketches of the most interesting tribes of Indians in North America, inasmuch as they are less known to the world, and more cleanly in their persons, and more richly dressed than any other Indians on the continent. This tour up the Mississippi presents to me the Sioux, Ricarees, Mandans, Gros-ventres or Miniatarees, Assinnaboins, Creeks, Ojibeways, Crows, Blackfeet, Snakes, Delawares, and Shawanoes. All these nations of Indians speak different languages, and most of them differ in their dress, domestic habits, amusements, &c.; and if my life is spared for a few years, my unwearied exertions will enable me to lay a pretty fair representation of them, together with the other tribes of North America, before the world.

The splendid costume and elegant taste with which the Crows and Blackfeet dress and ornament themselves, can only be appreciated or realized by those who can see them. I shall devote a future letter entirely to the costume and domestic habits peculiar to each nation, where you will be able to get a detailed account, and form a correct idea of the beauty of their dress and deportment.

As far as my travels have yet led me into the Indian country, I have more than realized my former predictions, "that those Indians who could be found most entirely in a state of nature, without the least knowledge of civilized society, would be found to be the most cleanly in their persons—elegant in their dress and manners, and enjoying life to the greatest perfection."

Every one of these red sons of the forest, (or rather the prairie,) is a knight, and a lord; his squaws are his slaves. The only thing which he deems worthy of his exertions, is to mount his snorting steed with his bow and quiver slung, his arrow shield upon his arm, and his long lance glistening in the war parade—or, divested of all his plumes and trappings, armed with his simple bow and quiver, to plunge his steed amongst the flying herds of buffaloes, and with his sinewy bow, which he never bends in vain, to dive deep in life's fountain the whizzing arrow. The buffalo herds which always graze upon these beautiful prairies in countless numbers, afford them abundance of meat; and so much is it preferred to all other, that the deer, the elk, and the antelope, sport upon the prairies in herds in the greatest security, as the Indians never kill them unless they want their skin for a dress.

Whenever Mr. McKenzie's ice-house is nearly empty of beef, he starts with three or four men on horseback, with two or three carts following at a distance, and oftentimes within view of the fort, if not within a mile or two, they will ride amongst a band of them, and in a few minutes kill ten or twelve of them, selecting the fattest of the herd. These scenes are exceedingly spirited and beautiful, furnishing decidedly the finest subjects for the pencil of any sporting scenes in the world. The horses in this country are all trained to it, and know exactly how

to approach the animal, without being guided by the bit. A short light gun is used for the purpose; the rider guides his horse at full speed, until he has selected the object of his prey; he directs his horse to it, then drops his bridle, and the horse at full speed approaches the animal on the right side, within eight or ten feet, when the shot is generally given with such precision through the vital parts of the body, that he seldom runs more than a hundred yards before he falls.

I rode in the midst of several of these scenes rather to study than to slay. In one of them, however, finding my horse had brought me so fairly alongside of a bull of the largest size, I caught, as my horse had the enthusiasm of the chase, and with my double-barrelled piece so disabled him that he was immediately left by the band. I halted, and saw my comrades sweeping over the prairies, mingled in the midst of the herd, and leaving at every few rods the dying victims on the plains. I was willing to stop the pursuit, for I found that I had luckily so disabled my bull that he could make none, or but little advance upon me, although he was continually rising and swelling himself with the most frightful rage, and endeavouring to pitch upon me. He was a scene for the painter or the statuary, one worthy of the sublime ideas of Michael Angelo. Not the tiger nor the black maned lion of Africa could have looked half so furious or frightful. I defy the world to produce an animal in his looks so furious and frightful as the buffalo bull, when he is roused in a rage, with his long shaggy mane covering his shoulders and falling to the ground. In this condition I drew my sketch book from my pocket, and by riding towards and around him, and exciting his fury, I was enabled to catch the very attitudes and expressions that I wanted. The party returning, at length, with some anxiety for my safety, and finding me dismounted and busily engaged with the infuriated gentleman before me, standing for his likeness, were not a little surprised and amused. When my series of attitudes and expressions were finished, a shot through the head ended the scene.

The health and amusements of this delightful country render it almost painful for me to leave it. The atmosphere is so light and pure that nothing like fevers or epidemics has ever been known to prevail here—indeed it is proverbial here that a man cannot die unless he is killed by the Indians. If the cholera should ever cross the Atlantic, what a secure, and at the same time, delightful refuge this country would be for those who would be able to reach it. I shall commence descending the river in a few days in a small boat, and shall stop some time at the Mandans and Gros-ventres or Minataree villages, 400 miles below this, which are probably the most interesting villages of Indians which I shall see on the river. From those villages I shall be able to give you some more interesting and amusing details of manners and customs of these uncivilized and unchristianized sons of the west. Until then adieu. Your friend and servant,

GEORGE CATLIN.

Mouth of Yellow Stone, July 15th, 1832.

INSTRUCTIONS TO YOUNG SPORTSMEN.

No. V.

IN most of my former communications, I have confined my remarks to the use of the gun, and the manner in which the learner should conduct himself in the field. In the present, and perhaps one or two future numbers, I will endeavour to point out the proper mode of finding the various game, and the most likely parts they inhabit; this is of much importance to the young sportsman, in order to afford him facilities in his excursions. The first bird I shall notice is the partridge, it being the primary and most common object of pursuit, and more accessible than others.

The most favourable season for hunting partridges is a cloudy, damp day, with the wind moderately stirring from the east; for, as this weather presages rain, the birds will always be found in the fields, feeding; and owing to the density of the atmosphere, the effluvium emitted by them, instead of ascending, is wafted by the breeze over the surface of the ground, and enables the dog to wind the birds at a very great distance, and the variety of objects which cover the ground, such as grass, leaves, stubble, &c. being softened by the dampness, less noise is created, and the birds consequently not so easily alarmed. It appears hardly necessary to remind you, that you should at all times enter the field against the wind, as the advantages for your dogs are too obvious to require comment.

Rainy and windy days are alike unfavourable for hunting; both having the tendency to drive the birds into cover for protection from the weather, but, as it is a common occurrence that a favourable morning is often followed by winds and rain, it is proper the young sportsman should know how to act in regard to either of the two days. I would prefer a moderate rain to a blustering north-westerly wind, and would choose rather a wet skin, than the ill effects of hunting through the latter; the former is only unpleasant for the time, and if you exercise constantly you need not fear taking cold; but the latter is painfully unpleasant (especially to the eyes,) for the present and the bad effect does not wear off for days; besides,

rain will quiet a covey of partridges, and make the scattered birds lie well; but a blustering wind will excite them constantly to motion, and drive them into the depth of swamps and thickets, when, during the former, they will only perhaps remain on the edges of bush-land, and under the most convenient cover: therefore,

On a favourable day, such as I have described, you must seek the birds at all hours in wheat or rye stubble fields, or those covered with high weeds or Indian grass, should feeding ground be near; but should the sun shine, and the day prove warm, it is more than probable towards noon the coveys may seek some neighbouring cover until feeding time in the afternoon; of this, however, you must judge for yourself.

On a windy day it is useless to hunt the fields, unless, indeed, these should be covered with high grass, and other cover not be at hand, as you will more certainly find the birds in some copse, thicket, swamp or hedge row, and nearly always to the leeward side.

I do not, however, advocate wet days for hunting, but would advise you not to depart in a rain, unless indeed it should be near the close of a protracted storm, which, if you intend an excursion for several days, will be perhaps the most propitious period for starting, as fine weather will certainly succeed. But should a moderate rain overtake you while in the fields, and your prospect of game be flattering, I certainly, (if your constitution is good,) would favour the prosecution of your enterprise, rather than you should return home.

A man who contemplates pursuing field sports, must not be frightened at a little bad weather, nor a wet skin, neither must he be chicken-hearted if he should now and then sink waist deep in water or mire, or have his garments torn from his person; these are consequences always attending a sportsman, and he must make up his mind to suffer patiently from hunger and thirst, wet and cold.

If, on beating for game in a district where you know these birds exist, you should be unsuccessful, you must endeavour to ascertain the reasons; these may be from the following: first, the foregoing causes of wind and rain may have effected this change; secondly, birds shot at and worried repeatedly, will frequently move off to other places to avoid persecution; thirdly, hawks are very destructive to partridges, and their appearance will drive a covey of birds into the strongest fastness, where they will remain from morning until calling time at sunset; and fourthly, as they approach maturity, and cover for them is lessened in consequence of the departure of vegetation, they are inclined to wander over a greater extent of feeding ground, and a covey which may be found in a particular field today, may not visit this spot again for a week, from these variety of causes: the young sportsman must make his calculations, and see the necessity of hunting faithfully every inch of ground without being discouraged. If you are on high ground and find no birds, take a survey of the country around you, and then depart for the most likely places; the most indubitable evidence of the presence of these birds, (next to ocular proof,) is the heaps of newly-made dung, which abound through their favourite feeding grounds; for hither at night they will always return, let their wanderings be what they may through the day time, and no spot must be left untried when this evidence is before you, as the birds, rest assured, are not far distant.

Should you commence your campaign early in the season, (that is, in October,) you will very likely encounter coveys of unfledged birds and others not half grown; these of course you must avoid destroying, and pass on in search of others; but the danger here is, that you may unheedfully shoot the old birds, and thus by leaving their progeny destitute of parental care, destroy the whole brood. It is to be regretted that there are those who feel no qualmishness on the subject, and will indiscriminately destroy every partridge they meet with, whether in full grown coveys, or during incubation, or at the most interesting period of fostering their young; but is this manlike? nay, humanity knows no such feelings as would deprive the unfledged and helpless young of the protection nature has provided; with care, however, you may avoid this, for so soon as the parents of a young brood take wing, they will give evidence of the fact by the manner of their flight; if the brood is very young, and hatched but a day or two, the mother will suffer you to approach within a few feet before she will move, and her flight will be only a short distance, while the male bird will evince his solicitude by running through the grass around you, and making a chuckling cry of distress; at this time the mother generally has the whole brood under cover of her wings. Should the young birds have been produced a week or two, the old birds will rise much sooner than in the former case, but will fly only a short distance and settle again on the ground; and in each case the flight mostly will be accompanied by a twittering cry, and the flight irregular and slow, and with but little of that whirring sound which usually accompanies the motion of their wings; in these instances the parents are leading their young, and scratching about to instruct them how to feed.

When the young are nearly half grown, and able to shift for themselves, the parent birds will always rise first, after which the whole brood will accompany them, uttering their feeble cries for a considerable time.

Now should you be tempted to make a shot in the latter case, there is some excuse for you; but in the two former, should you destroy the parent birds, you deserve to be severely censured, and a repetition of this act ought to be branded with disgrace.

It is not uncommon during the month of October to see immense coveys of partridges, consisting of several distinct broods, which is evidenced by their difference of size; this occurs more particularly when their period of partial migration arrives. The writer has often sprung coveys of this description, which, on a moderate calculation, contained from one hundred to one hundred and fifty birds; some matured, others half grown, and again those scarcely able to soar above the stubble; and this large number, no doubt, was caused by the junction of several communities, during their migratory movements, and while led by the parent birds; later in the season this seldom occurs, and when it is the case, it is always from the accidental meeting of two or more coveys. In November, and until the division of the parties into pairs again in the spring, it is rare to meet with a single covey containing over thirty birds, and the average number may generally be placed at twenty.

The shooting season for partridges should not commence before November; formerly, in some places, it was established, by law and custom, on the 1st of September, and afterwards altered to October. But, if sportsmen would control their eagerness one month later, and not commence until the 1st of November, the birds would be full grown, and the shooting more pleasant, in consequence of this circumstance, and of the denuded state of the trees and other shrubbery. The shooting season then would consist of three months, November, December, and January, which should suffice. No bird is fit to eat out of season, and the partridge is not good food until that period when its food consists of grain. During the summer and early fall months, this bird will feed on insects with as much avidity as those which are not granivorous, but this is more of necessity than choice, as insects are then in abundance, and grass seeds and grain scarce, being unripe and not within their reach; but so soon as frosts appear, insects are destroyed, seed are ripened and cast to the ground, and the partridge finds food more suitable to its nature, and its flesh becomes firm and of good flavour. Most carnivorous animals are rejected as unfit for food, and the partridge out of season is of this description, consequently the shooting season should be regulated accordingly. You should not hunt when the ground is covered with snow; this generally is the signal for all true sportsmen to give up partridge shooting for that season; the birds then, instead of being persecuted by you, should receive protection from your hands against their other enemies; these you know are hawks of all kinds, and vermin, such as foxes, minks, weasels and skunks. The farmers' boys, also, are the most formidable at this time, by trapping numbers, and bringing them to market; of these you should always purchase a portion, and sustain them through the winter, so that you may release them again in the coming spring.

In preserving partridges through the winter, permit me to remark, that several things are requisite which are not always observed, even by those who pretend to sustain quantities of these birds; and for want of these precautions we sometimes see out of a number of cage birds, many, perhaps more than half, become sick and die. To prevent this, you should in the first place provide a room with a southern exposure, (into which the sun will shine) sufficiently large for them to run about and get exercise, for you must recollect, the chief exercise of the partridge when at liberty is on foot; in this room you should put some sand and gravel mixed, not a handful or shovel full, but a wheelbarrow load; this will not be too much; this article is used by the partridge both internally and externally; internally to assist the mechanical operations of its gizzard, and externally, for the same purposes which we use water, namely, to cleanse ourselves from impurity; what would be the consequences to us were we deprived of ablution from water? should we not be covered with filth and vermin, and these generate disease, and death of course would certainly follow? The partridge, therefore, as well as all birds of the gallinaceous order, wallow in the dirt to cleanse their bodies and preserve them from vermin;* and it hence follows, that if this natural supply is withheld, the consequences to these interesting birds will be the same as to us if we were deprived of the use of water. I am thus particular, in order to show the necessity of placing a larger quantity of sand and gravel within their reach than is usually done, so that they may be enabled to wallow deeply into it. The room should also be in a situation where the birds cannot be disturbed, for this frets and frightens them, and will prevent their feeding; you should feed them but once a day, and then just before sunset, and with food sufficient for two meals, consisting of the following varieties, wheat, rye, broken corn, buckwheat, and stale bread; a little water should of course be placed in the room in some shallow vessel, which should be replenished by means of a

* The writer has often observed, that when a sick partridge was confined with others which were well, the latter would frequently search the plumage of the former for vermin, with much industry and apparent commiseration, while the sickly bird would evidence by its passiveness, much relief from the kind offices of its friend.

tunnel from without. The room should never be entered, but the feed thrown to them through a hole in the door or window.

These birds never have recourse to water, except for drink, and but little of this will suffice, as they will satiate their thirst in preference, from the drops of rain and dew, which adhere to the leaves and grass; but every sportsman has noticed, during August, September, and October, the number of wallowing places in the earth, in stubble fields and small bush land, especially on the south side of hills, and this habit continues always until severe frosty weather. When any animal is taken from its native state, and placed in captivity, many things should be taken into consideration, so that confinement may not affect its health; and, as the partridge uses exercise mostly on foot, is fond of the sun, and cannot live without sand and gravel, it proves the necessity of conforming as much as possible to its habits in these respects.

Should many more seasons be experienced like those of 1829, 30 and 31, the preservation of the partridge will be an object of primary consequence with the sportsman; and when it is considered that this bird is a great source of his enjoyments, and all of his preparation subsidiary to it, is it not a matter of moment, that the *cause* should be preserved, *if he wishes to experience its effects?* I.

POISONOUS FISH.

Clupea Thryssa,	or	Yellow-billed Sprat.
Conger Muræna,	"	Conger Eel.
Corcinus Fuscus,	"	Grey Snapper.
Coryphæna Splendens,	"	Dolphin.
Cyprinus Barbus,	"	Barbel, (of Europe.)
Opah,	"	King Fish.
Ostracion Glubellum,	"	Smooth Bottle Fish.
Perca Major,	"	Barracuta.
Perca Marina,	"	Rock Fish.
Scomber Thynnus,	"	Bonetta.
Tetrodon Sclératus,	"	Tunny.

The cancer mænas, or common crab, and the cancer gammarius, or lobster, are the principal varieties in the insect tribe employed as food, and capable of exercising deliterious effects. The mytilus edulis, or muscle, is, perhaps, the only edible species of vermes, or worms. The ill effects sometimes attributed to the muscle of Europe, are generally supposed to be occasioned, when a small tuft of moss, attached to the body of the worm, is swallowed through carelessness; and the symptoms produced, may rather be referred to those of oppression, in consequence of the indigestible nature of the substance, than to any poisonous qualities it possesses; there are, however, some

muscles, particularly in the East and West Indies, that, in common with some other marine animals, exercise an unfavourable influence upon the animal economy, produce the same symptoms, and terminate in the same result as the most poisonous of the fish tribe.

This list, then, comprises the common varieties of poisonous animals, but many could probably be added to the number: the exact nature of their qualities is but little understood; whether they reside in the whole carcase, or in some particular part of it, are introduced into the animal in the form of food, or are constantly retained, are occasioned by the spawning season, by any peculiar habits of the animal, or by its sickness; and whether they depend upon the idiosyncrasy of the individual eating them for their operation, are all circumstances of remark, and of uncertainty in determination.

Fish and muscles of the most poisonous description appear to the eye as healthy and agreeable as the most wholesome varieties: chemistry will not lend any assistance in discovering their noxious properties, and out of a number of persons who may occasionally have eaten of the same dish, a few are found violently, some slightly, and others not at all affected. The process of carefully cleaning and salting, appears to abate the danger of eating some of the varieties above mentioned; but even this precaution will not always ensure escape: it is then certain, that whatever poisonous qualities exist, they are greatly increased or diminished by the peculiar condition of the system generally, and of the digestive organs in particular, of those who partake of them. Crabs and lobsters, especially, will affect some persons at one time, and prove innocuous at another, even in the same season, and under similar circumstances in every respect. *The immediate symptoms* of disorder occasioned are, great nausea, constriction of the throat, thirst, a sense of suffocation, and a burning heat on the whole surface of the body; to these succeed diarrhœa, cold sweats, faintness, and spasmodic affections of the muscles; efflorescence of the skin, and sometimes a miliary eruption; in the worst cases the eyes become inflamed; the wrist, ancle, and knee joints, are visited with acute pains; tenesmus and stranguary ensue; and the sufferer is almost beyond the power of art: these symptoms, of course, apply to the worst cases; to such as are recorded in the annals of West Indian practice, in general the milder symptoms alone prevail, and are under the control of medicine. When death ensues, it would appear to be occasioned by an absorption of the poison through the circulation, and how actively it exerts itself through that medium is apparent from the symptoms occasioned; an examination of the body after death displays the stomach and intestines in an inflamed state, with occasional patches

of ulceration of the mucous membrane; generally a quantity of dark, fœtid fluid in the stomach; while the vessels and membranes of the brain present appearances, sometimes of intensely, but generally of slightly, increased vascularity. The most valuable remedies are, first, evacuants of the stomach and bowels, and then cordials and stimulants; the use of ether, in drachm doses, frequently given in some simple fluid, may, perhaps, be preferred.

The *Rationale* of this treatment is appparent.

There are no *Tests* by which this mode of poisoning can be detected.—*Coley on Poisons and Asphyxia.*

EXTRAORDINARY PIGEON MATCH.

Two persons arrived in London the 10th of July, from Antwerp, with 110 pigeons, to be thrown off there, for the purpose of ascertaining whether they would find their way back, and, if so, in what time they would perform the journey. The birds belong to the Cansdel Tavern Club, Antwerp; and eighteen prizes were to be competed for in this flight; the first a gold medal of considerable value, and the others sums of money. Sunday had been fixed at Antwerp for their departure, but the weather was too hazy. On Monday morning, at a quarter to nine, a favourable glimpse of sunshine broke through, which fixed their determination. The pigeons were contained in eight inclosures, constructed of wire and canvass, and capable of admitting a sufficiency of air to the birds, and on the top of each inclosure was a trap-door of tin. The baskets were all placed side by side, and after the means of opening the traps were so adjusted as to be opened at the same time, at a given signal the doors were all lifted up, and out rushed the pigeons at the same instant. They rose in a flock, and never hovered the least, but bent their way as straight as possible in the direction they were most likely to reach home. They were all pigeons of a cross breed unknown to the English fanciers, having traces of the carrier, tumbler, and dragon pigeon, but all having one distinguished peculiarity, in what is designated the "pearl eye." The men set off on foot shortly after for Dover, with a proper certificate of the hour of departure. A letter from Brussels, dated July 23, says—"The pigeons, 110 in number, to be let fly on Sunday in London, were not despatched till the next day at three-quarters past eight in the morning, with a strong W. S. W. breeze. At eighteen minutes past two the gold medal was gained; the second pigeon arrived thirty seconds later; by twenty-three minutes past two, six had arrived, and all the prizes, eighteen in number, were gained by 5 o'clock, when the nineteenth arrived; twenty-six others had reached home before day-break the next morning. Thus, the swiftest pigeon flew to Antwerp in five hours and a half—the distance in a straight line sixty-two common leagues.—*Lon. Sport. Mag.*

RIFLE SHOOTING.

Mr. Editor:

A few days since, while travelling through Schuylkill county, my attention was drawn to a collection of "Leather Stockings," at a place called St. Clair, who had assembled for the purpose of shooting for an ox. The interest I felt in witnessing an exhibition of the kind, as well as the grotesque appearance of some of the party, induced me to remain for the day, and I accordingly took my station where I should be free from accident and best witness the performance. Some difficulty, however, occurred between the shooters and the owner of the ox, which prevented the match from going on. The reasons on both sides I could not understand, as the discussions were in German; but in the afternoon, one of your citizens, well known and respected, and whose fame as a shooter had preceded him, arrived with a hunting party, and immediately the whole appeared upon the ground for a trial of skill. The annexed cut shows the size of the paper shot at, and the precise manner it was perforated by the different balls.

Those who shot with a rest took their station at one hundred yards, while those who shot off-hand, or without a rest, advanced to within sixty yards of the target: the forty yards being allowed as an equivalent for shooting without a rest. The "city feller," as he was called, being an off-hand shot, and a stranger

among them, was requested to take his stand first, which he complied with, and with the report of his gun the paper dropped. "Drove the nail," cried the judges, or the persons stationed at the target. "Altogether an accident," replied the shooter, and the paper was restored again. A Mr. Lucas, a Blue Mountain yankee, took the stand next. "This gentleman is considered the best shot in the county," said one of his companions, and the result shows that he is no "*Slouch.*" He fired, and buried the ball in the upper edge of the paper, which I send you. The others took their turn, but although all came within an inch of the paper, no one struck it; and the stranger again entered the stand for a second shot. The result you will find in the lower edge of the paper. When this shot was announced, an old gentleman, (a German,) standing near me, cried out to his companion, who was at the hundred yard station—"Jake! Jake! by hoky that city feller shoots like tamnation." The others fired, and the "city feller" took the stand for the third time; the mark of this ball you will find in the centre of the paper, a little to the left of the first shot. Lucas followed and put his ball a little to the left of those in the centre. The whole shooting was good. The entire space did not occupy more than four inches in diameter.

The generous hospitality that was offered to the stranger is also deserving of notice. When the wind blew they would call to him to hold up, and carefully pointed out every thing that was calculated to operate against him. Such other marks of kindness were exhibited, as clearly showed to me, that those people, though rough in exterior, and uncouth in speech and habit, knew and cultivated those feelings which entitle them to our veneration and respect; without envy they saw a competitor who rivalled and astonished them; without prejudice they acknowledged and proclaimed it. M. J.

November 27, 1832.

From the American Turf Register.

HUNTING THE WILD CAT IN NORTH CAROLINA.

Mr. Editor:

We have a species of game with us, which I believe is peculiar to this section of country—at least I see no mention made of it in your excellent magazine, where I have met with descriptions of every other variety of hunting. And yet, the Wild Cat will afford the huntsman as much sport, and the hounds as much work, as any other animal that I ever followed. Indeed it requires a staunch and numerous pack to take them, for even when run to a stand still—no easy work by the by—they are enabled from their great strength and ferocity, to keep five or six dogs at bay, without difficulty.

The Wild Cat is much larger, and infinitely stronger than the grey fox, (the red not being an inhabitant of our woods, I know nothing of.) It is about as fleet as the common fox, but as it confines its run to very strong and thick covers, the chase lasts much longer than that of the fox. And being, in addition to all this, a terrible enemy to the farm-yard, taking off pigs, poultry, lambs, and sometimes even grown sheep, our sportsmen, who are all farmers, pursue them with inveterate industry. Invited by the flattering appearance of the weather last week, Mr. W. and myself determined to give our dogs a trial. We accordingly rode to cover on Saturday morning, with six couple of as fine dogs as ever followed deer, fox, or Wild Cat. It was our first turn out this season—the whole pack was, consequently, full of riot, and the young dogs in particular, were perfectly frantic. The morning was as auspicious as we could wish—the dog fennel and pine bushes hung droopingly, overloaded with dew. It was quite cool, clear as a bell, and so perfectly calm, that the joyous notes of the dogs, as they gambolled in wild excitement before us, or leaped up fawningly upon our horses, were heard to re-echo over the distant Neuse. After leaving the river a little to the right, we threw off the hounds into a very promising cover, on the north side of Smith's Creek. Here we had not proceeded very long, when old Drummer told us, that some prowler had been passing, during the night. The scent was very cold, and we worked it slowly and with difficulty, along the windings of the creek; frequently interrupted by the outbursts of the young dogs, after rabbits, &c. By dint of whipping and scolding, we succeeded in bringing these last under some subjection. The trail still appearing very cold, we made a cast on the opposite bank of the creek, but with no better success. The game had been there, but it must have been very early, on the previous evening. In the mean time, old Drummer had got back to his old trail, and continued to work it with untiring perseverance. The drag appearing to grow warmer, we concluded to hark the other dogs to him. Echo and Rover soon gave tongue, Macduff and Nimrod joined in. Still our best fox dog, old Milton, refused to recognize the trial as legitimate; we were now sure of the nature of our game; it must be a Wild Cat. We continued to encourage the dogs with increased anxiety. At last, all of them, young and old, acknowledged the trail, and growing into a confirmed drag, it proceeds

through the river swamp, deep into the marsh, far along the margin of the river, and then—what a crash! you might have heard them down the wind, three miles off. And now, swelling into a louder and still a louder strain, the quarry makes directly for the spot where we had taken our stand, upon the verge of the swamp, as far in as we could well make our way. We had raised our voices in one exulting shout, when that wild burst had told us, the game was up. But in the tumultuous roar behind him, every other sound was hushed, and the Cat made straight for us, either not hearing or heeding our halloo. We were now still as statues—and the pack came rushing on—the crashing of the reeds, the rending of the undergrowth, the splashing of the mud and water, and the deep mouthed roaring of the hounds, uniting together, like the mingling tumults of a September gale, and seeming to give to the terrified animal, the wings of the wind. He must have passed within ten steps of us, but owing to the thick cover, we could not catch a view. The pack, however, were close upon him, for they passed us, running breast high, all together—no running dog, or in line, but each emulously dashing for the lead. The Cat seemed determined to try their mettle, and beat them by downright game. Contrary to the usual practice of the animal, he made a straight stretch over the highland, along the border of Smith's old field, and at such a slashing rate, that, to lie by them, made Madge blow like a blacksmith's bellows on a frosty morning. She's a little too fat at present, and not long from grass. Finding this game could never last long, the Cat endeavoured to throw them out, by a rapid succession of ugly dodges, which bothered the young dogs excessively. But old Milton was wide awake—he had followed too many foxes in his day, to be out-generalled even by a Wild Cat. He followed him cautiously, but unerringly, through all his circles and angles, and the whole pack winding after him, with such close and unremitting assiduity, that they only made two losses, and then, for only two minutes. After circling for about half an hour, in a very thick gum swamp, where he had a great advantage over the dogs, "*Monsieur le Chat,*" finding himself considerably in advance of the hounds, thought he might try them again at long taw; so hoisting out all canvass, he made sale for Bachelor's Creek. This was just what the pack wanted; the young dogs were terribly pestered in the swamp, but here again, all was plain sailing; and so the Cat seemed to think too, for, finding that he could not make good his retreat to Bachelor, he tacked ship, and stood back on his old track—but he was done up. He did not indeed contrive to get back to his old place of refuge, the swamp; but we knew, by the manner in which the old dogs were pushing for the lead, that his fate was sealed. He had been now two hours and a half on the pad, and we could tell, as we saw him mount a log, his eyes flashing, his hair bristling, his short tail lashing, "as doubting to return or fly"—his race of existence was run. As we raised the view halloo, his tail drooped again, which he was elevating as a signal for combat, and he dragged himself from the log, with weak and unsteady steps; scarcely had he jumped from one end of the log, when Milton and Echo mounted it at the other, followed by the rest of the pack. Animated by our cheer, and the sight of the devoted game, they seemed to gain additional vigour, and, before we had made our way a hundred yards further in the swamp, we heard a sharp, angry growl, then Echo's shrill yelp, as she leaped upon the prey, and then a cry from her, as if she had run afoul of a kettle of hot water. Talleyrand next gave a howl of agony, as he shrunk from the rude welcome of the Wild Cat. All the rest as they came up, seemed to acknowledge by their cries, that they had caught a tartar. But what can one do against twelve?—most of them, too, young, strong and active. Why, Jackson and Beaufort alone, are strong enough to pull down the strongest buck that ever stood at bay. Even a Wild Cat must yield to such a fearful odds; so that when we succeeded in scrambling to them, we found our enemy, (and a huge one he was,) dead upon the field, and the dogs limping and baying around, manifesting by their condition, the severity of the chase and combat.

Yours, respectfully, A. F. G.

Newbern, September 22, 1832.

ANECDOTE.

"The bon-vivans of America, talk of the canvas-back with an interest that borders on affection, and is sometimes very amusing. 'Sir,' said an old fellow to me, 'I wished to give a duck feast, and accordingly I bought nine couple of them all fresh killed, and all of the right weight. I stuffed them into every corner of my gig, and would not suffer the cook to touch them except in my presence; I dressed them all myself, in different ways, and in my own parlour, so as to have them all done according to figure, sir! Well, sir! all my company had arrived, except an old German; we could not wait, and sat down without him. When he came, he exclaimed, 'What noshing but duckhs!' I started up in a rage, sir! a violent rage, sir! 'noshing but duckhs!' I repeated after him.—Why, you old scoundrel, said I, your own Emperor of Austria never had such a dinner, he could not, sir, though he gave the best jewel in his crown for it."

[*Vigne's six months in America.*

SKUNK.

SKUNK.

MEPHITIS AMERICANA.

[Plate XVII. Vol. 2.]

Mephitis Americana; Desm. Godman *Vol.* 1. *p.* 213, *Viverra Mephitis;* Gmel. [*L.*] *Syst. Nat. p.* 88, *No.* 13, *Chinche;* Buff. *Hist. Nat. tom.* 33, *pl.* xx. *fig.* 2. *Enfant du diable;* Charlev. *Nouv. France* v. 196. *Skunk Weesel,* Penn. *Quad.* 2, *p.* 65, *No.* 263.

The Skunk is a pretty and at the same time a most noxious animal, and is ranked among those vermin so destructive to the farmers' interests, and to various descriptions of game.

Most persons are acquainted with this animal by character, although but few know it by sight; nor do any seek to encounter it farther than with feelings of enmity or revenge, as it is an unwelcome visiter to any neighbourhood, in consequence of its destructive and other disagreeable habits. When its abode is well secured it is a most difficult matter to dislodge or drive it from the premises; and there is perhaps no animal possessing so little energy and strength, which is so completely protected by other natural means from its enemies.

The fetor emitted by the Skunk, when defending itself, is so exceedingly powerful, as will almost suffocate its antagonist and cause a rapid retreat from so disgusting an enemy. This stench can be produced or retained at pleasure by the animal, and is seldom diffused, except when violence is committed toward it, or in defending itself from attack. Of the nature of this liquid many persons differ; some believing it to be its urine,* and others, more reasonably, contend that it is entirely distinct, and given only as its means of protection. On this head Dr. Godman remarks, that "A few glands secrete a most noisome and intolerably stinking fluid, and this scattered with peculiar force upon the body of its enemies, or even in the air, is sufficient to disarm the violence of most quadrupeds, and induce man himself rather to avoid than to seek an encounter.

"The organs by which this fluid is formed are placed near the termination of the digestive tube, and the ducts from the glands open into the rectum, by the aid of whose muscles the fluid is ejected with astonishing force, and is aimed with great accuracy, rarely missing the object if discharged while within the proper distance. The faculty this animal possesses of annoying its enemies by the discharge of the fluid just mentioned, causes it rather to be shunned than hunted, which the value of its skin would otherwise be sure to occasion.

"The fetor produced by the Skunk is especially characterized by all who have experienced it as suffocating or stifling, which is owing to its peculiar concentration. The predominant odour is that of muskiness, but in so condensed and aggravated a form as to render it almost insupportable, even at a considerable distance from the spot where it is first discharged. A very good idea may be formed of this stench by breaking and smelling a leaf or stalk of the plant called skunk cabbage, (the *Dracontium fetidum*, or *pothos fetidum*, resembling it in every respect except in strength, which perhaps no artificial accumulation of this vile scent could ever equal.

"The fluid ejected by the Skunk is not merely offensive by its stench, but also in consequence of its highly stimulating and acrimonious qualities. When any of it is thrown into the eyes, it is productive of very violent and dangerous inflammation; we must suppose that this peculiar acrimony, rather than any mere offensiveness of odour, is the cause of the marked repugnance evinced by dogs, as these show not the slightest sign of uneasiness from the presence of the most nauseous and putrid effluvia from animal or vegetable substances, yet run howling and trying to thrust their noses into the ground after having been exposed to this pungent perfume from the Skunk.

"In its extreme volatility it bears a considerable resemblance to true musk. The smallest drop is sufficient to render a garment detestable to the wearer and his companions for a great duration of time, and without any perceptible diminution of intensity. Washing, smoking, baking and burying articles of dress, and in fact every effort short of destroying the materials of which they are made, seem to be equally inefficient for its removal. This scent is not only thus enduring when the fluid is sprinkled upon clothing, but the spot where the animal is killed, or where the matter was ejected, retains it for a great lapse of time. 'When I was at Cumberland House, (says Hearne, p. 378,) in the fall of 1774, some Indians that were tenting on the plantation killed two of these animals, and made a feast of them, when the spot where they were singed and gutted was so impregnated with the nauseous smell which they emit, that after a whole winter had elapsed, and the snow had thawed away in the spring, the smell was still intolerable.' A friend informed the author of this work, that he had plainly perceived the odour of

* It has been for a long time the opinion among the country folks and many others, that the unpleasant perfume discharged by the Skunk is its urine, and that it is scattered against its enemies by its tail; this liquid, Dr. Godman says, produces a *phosphorescent* light.

the fluid ejected by this animal from across the Hudson river, near Albany; we have no doubt of its being possible to smell it at a much greater distance when the wind blows from the spot where the effluvium is thrown out.

"However singular the fancy may appear, we are assured by Catesby that he has seen one of these animals tamed as a pet, and following its owner like a little dog, without offering to offend any one by its peculiar odour, which it has the power of dispensing at will. When it is recollected that on any provocation or threatened injury, the Skunk immediately fires upon his disturber, it will be conceded that such a pet must require a very cautious management, for to startle it suddenly, or injure it accidentally, would expose both friends and enemies to a shower of 'liquid sweets,' which all 'the odours from the spicy shore of Araby the blest' could not correct.

"If the Skunk be killed while unsuspicious of the approach of danger, or before time has been allowed for the discharge of his artillery of perfume, the animal is not in any way disagreeable, and may be approached closely, or even eaten without the least unpleasantness, if the glands be carefully taken out. Its flesh, when the odorous parts have been carefully removed, is said to be well flavoured, and resembles that of a pig considerably. It is eaten by the Indians, and occasionally by hunters, with much relish.

"The Skunk is most generally found in the forests or their immediate vicinity, having its den either in the hollow of an old tree or stump, or an excavation in the ground. It feeds upon the young and eggs of birds, and on small quadrupeds, wild fruits, &c. Occasionally the Skunk gains access to the poultry-yard, where it does much mischief by breaking and sucking the eggs, or by killing the fowls. When resident in the vicinity of farm-houses, it remains for a long time without giving notice of its presence by emitting its offensive fluid, which proves how ridiculous is the notion that the urine of this animal is the source of its disgusting fetor; for, as Hearne justly observes, were this the fact, the whole country it inhabits would be rendered almost insupportable to every other creature."

The Skunk, like most predatory animals, seldom travels in the day time, but so soon as twilight of the evening has approached, it sallies forth in search of prey, and while the unsuspicious and innocent objects of its search are sleeping, they become the easy victims to the rapacity of this destroyer. The Skunk destroys its prey almost instantly. This is in consequence of the suddenness with which it strikes the intended victim at the throat, and the sharpness of its teeth and strength of grasp produces death so soon, and with so much quietness, that even in a henroost no alarm is given to a neighbouring fowl by the intruder, or the unfortunate sufferer. With, however, its destructive habits, it has some redeeming qualities, as it is a great enemy to rats, and will utterly destroy these vermin, as readily as the ferret; and it is said that some farmers on this account encourage their presence by all possible protection; and a certain author states, that "he witnessed an instance where a great number of rats were found in a stack of wheat, but all of them in the upper part; for several yards from the ground, not a rat was to be met with, which excited some surprise; but the circumstance was fully explained on reaching the bottom, where it was found an enormous Skunk had taken up its abode."

This animal is very common throughout the United States, but, as it roams only during the night season, it is seldom seen, except by accident. The writer, during his residence at the paternal home, a few miles from this city, frequently encountered the Skunk, and became in a measure familiarized to its disgusting habits: to a person, however, ignorant of the animal and the stench it produces, the scent for the first time is exceedingly offensive and intolerable, and the most credulous would not believe its power, until it could be sensibly experienced. In one instance, while hunting woodcock during the month of August, one of my dogs encountered and killed a Skunk before I could approach the belligerents, and from the effects of the fetor received in the battle, he was rendered entirely useless for a whole year, and did not recover the goodness of his nose for nearly double that time. Subsequently I was hunting with the same dog after partridges, and while passing through a large wood, he came to a stand near a pile of cleft wood: thinking a rabbit had taken shelter beneath it, I endeavoured in vain to dislodge it; at length, stooping down to take a closer survey, I discovered a Skunk sitting in a defensive posture, ready in a moment to discharge its powerful artillery; wishing to have a joke with a gentleman who was with me, and who was entirely ignorant of the animal in question, I requested him to approach and examine the stranger, to which he assented; and after expressing his admiration, and made some inquiries about it, I told him to stand where he was until I shot it. Not suspecting my design, he approached to within five or six feet, while I receded as many yards and shot the animal. Immediately my friend was enveloped in this horrible stench, almost to suffocation, who retreated fifty or sixty yards, coughing and puffing so vehemently, as caused me to regret that I had played the trick on his ignorance. The volatility of this odour is wonderful, and can be scented at a great distance. In

the above instance, the animal was killed nearly three-fourths of a mile from our destined home, and ere we reached it, the inmates of the house had experienced the scent, and asked us on our arrival, if we had not killed a Skunk.

This animal in some parts is called the Polecat, and in England the Phillemark or Fitchet. Its form somewhat resembles the ferret, but much larger; its motion is graceful, but not rapid, and when running, moves in zigzag directions. A full grown Skunk is about eighteen inches long, and the tail seven, one half of which is caused by the long hair at its extremity. It generally is of a dark brown or chocolate colour; this is caused by the arrangement of its pelage, which is of two kinds; the long hair which is blackish, and the fur which is of a dirty yellow, and the mixture of the two causes the brownish appearance of the animal. On the forehead is a white spot; the head is small, broad at the top, and tapers considerably to the nose; the ears are small, rounded, and sometimes tipped with white—the end of the tail is purely white; two white stripes extend along the sides of the back, commencing from the back part of the neck, and terminating near the hips—the throat, legs, and lower part of the tail, are the darkest. This is the general appearance of the animal—but they vary so much, that no individual can be depended on as a representative in description of the race; as some are lighter, and others darker in colour; some are without the regular stripes on the back and spots on the head, and have patches of white over different parts of their bodies.

The female brings forth her young in the spring, to the number of four or six.

MANNERS AND HABITS OF THE DOMESTIC CAT.

I have in my family a Cat, a castrated male, which I brought up from a kitten. He is a fine, well-shaped animal, and has a coat of hair of the most perfect, glossy black, which, with the true characteristic of his species, he keeps very clean and beautiful. He is one of a litter of five, the offspring of an old grey Cat, an excellent mouser, who is since dead. Being the stoutest and handsomest kitten of his family, he was preserved from the general destruction, and left in the charge of his old mother, with whom, in his early days, he had many a rare romp, and from whom he received many a prudent castigation.

Quin, (as he is called,) is now four years old, and though he has lost some of his youthful vivacity, is still at times exceedingly playful and amusing. He will sometimes fly about the house as if he had lost his senses, tear up and down stairs, and throw himself into the air with the most antic capers. His general deportment, however, is one of much greater gravity; indeed, a considerable portion of his day-time is passed in sleep, to which, like a true Cat, he is deeply addicted. His disposition in the main is very sociable; and if strangers come into the house, he is not satisfied until he has walked round them, and made his examination. Any object, indeed, to which he is unaccustomed, undergoes his scrutiny; a new article of furniture or clothing immediately attracts his attention, and he enters at once into a close investigation. He takes particular delight in inspecting the market basket, and although he does not venture to meddle too closely with its contents, he exhibits more or less pleasure according as they happen to agree with his taste. He is somewhat of an epicure, and has his fancies in eating as well as other things. Salt meats he rejects; but fresh fish and oysters, especially the latter, afford him peculiar pleasure. Almost any kind of fresh meat will satisfy him, but he prefers poultry, which he will devour either raw or cooked. He has also a strange partiality for the batter of buckwheat cakes; but in the gratification of his palate exhibits an instructive lesson of moderation, never eating after his appetite is satisfied, however dainty may be the food.

Like most of his species, Quin has a great fondness for heat. In winter his delight is to toast himself on the rug before the grate, where he will endure its effects to a great degree; and in summer he will bask in the sun, (frequently lying on the back of his head, with his nose upward,) until his black coat has imbibed what appears to me a most uncomfortable quantum of warmth. The hot days of this August, however, have driven him to the shade of certain bushes in the garden, under which he seeks shelter from the noonday sun. Here he receives frequent visits from divers wasps and humble bees, with which he sometimes maintains a determined warfare. I do not know how he manages to prevent them from stinging him; but when they do not voluntarily abandon the field, he mostly comes off victorious, and ends the combat by making a meal, (a light one to be sure,) of the vanquished enemy.

He has a remarkable aversion to persons of colour; and if any such are employed about the house, he will generally betake himself to the garret, and keep in seclusion as long as they remain. He sometimes requires to be won from his retreat by the voice of some one to whom he is attached, calling him by name, to which, in general, he readily answers. I do not recollect to have noticed any other example of this peculiar dislike in the Cat, or

animals of the Cat kind. From what it may arise in this instance, I am entirely at a loss to determine.

We have heard a great deal about the treacherous and unkindly disposition of the Cat, but I am inclined to think it is most generally the result of ill usage. I have been in the habit of playing with Quin, and often somewhat roughly, more especially when he was younger and more volatile; and though he has sometimes laid *violent paws* on me, I believe he never gave me an *intentional* scratch, unless when I happened to hurt him, and frequently not even then. I have repeatedly suffered him, besides, to take my hand into his mouth; and although he has often bitten it playfully with considerable force, yet I think he never drew blood, nor used his teeth upon me except with the most harmless motives. To children visiting the house, he has generally exhibited a peculiar partiality, and has sometimes played *hide and seek* with them, almost as knowingly as the little romps themselves.

This, however, may perhaps be deemed a merely negative quality; but he has sometimes shown what I am disposed to call a positive kind of affection. He frequently meets me as I leave my chamber in the morning, and in his peculiar way, which is to be sure somewhat odd and uncouth, endeavours to show his pleasure and regard. On one occasion, when one of the female domestics, for whom he had a great partiality, was sick, he made his way into her chamber, and finding her on the bed, raised himself up at her side by his fore paws, as if to inquire why she was there. Though not generally fond of being nursed, he sometimes becomes exceedingly loving, and will insist on nestling in the lap of some one of his favourites about the house. From all I have been enabled to observe, I am therefore inclined to the belief, that, although the Domestic Cat does not afford so decided an exhibition of fidelity and affection as is frequently observed in the character of the dog species, it is not, nevertheless, so entirely devoid of all kindly feeling and attachment as is sometimes uncharitably supposed. I imagine that good and gentle treatment will in the main be found to produce the same result of gratitude and regard in both, though most probably not precisely in an equal degree. The character of the one animal for fidelity is established, while that of the other is calumniated for the reputed want of it, and this very circumstance may have considerable effect in developing the disposition for which they are respectively praised and censured.

The desultory remarks here thrown together are heartily at your service, if you think a few occasional observations of the habits and manners of an individual calculated in any measure to elucidate the character of the kind. W.

A FOUNTAIN OF PETROLEUM, CALLED THE OIL SPRING.

By Professor Silliman.

The Oil Spring, as it is called, is situated in the western part of the county of Alleghany, in the State of New-York. This county is the third from Lake Erie, on the south line of the state—the counties of Cataraugus and Chatauque lying west and forming the south-western termination of the State of New-York: the Spring is very near the line which divides Alleghany and Cataraugus.

Being in the county of Alleghany, I was indebted to the kindness of a friend, who, on the 6th of September, took me from Angelica to the Spring. After crossing the Genesee River, our ride was to the town of Friendship, six miles; then to Cuba, eight miles; and thence, into the township of Hinsdale, three and a half miles; making seventeen and a half miles from Belvidere, the seat of Philip Church, Esq., and twenty-one miles from Angelica village. The place will be found, without difficulty, by taking a guide at Hick's tavern, which is on the corner of the road from Cuba, where it is intersected by the road to Warsaw, two miles west of Cuba. The last half mile is in the forest; a road is cut, for the greater part of the way, through the woods, but the path becomes, finally, an obscure foot track, in which a stranger, without a guide, might easily lose his way, or at least fail of finding the object of his search.

The country is rather mountainous, but the road running between the ridges is very good, and leads through a cultivated region, rich in soil and picturesque in its scenery. Its geological character is the same with that which is known to prevail in this western region; a siliceous sandstone, with shale and in some places limestone, is the immediate basis of the country; the sandstone and shale, (the limestone I did not see,) lie in nearly horizontal strata; the sandstone is usually of a light gray colour, and both it and the shale abound with entrocites, encrinites, corallines, terebratulæ, and other reliquiæ characteristic of the ancient secondary or transition formation.

The Oil Spring or fountain rises in the midst of a marshy ground; it is a muddy and dirty pool, of about eighteen feet in diameter, and it is nearly circular in form. There is no outlet above ground—no stream flowing from it, and it is of course a stagnant water, with no other circulation than that which springs from changes of temperature, and from the gas and petroleum which are constantly rising through the pool.

We were told that the odour of petroleum is perceived, at a distance, in approaching the Spring; this may, not

improbably, be true, in particular states of the wind, but we did not distinguish any peculiar smell until we arrived on the edge of the fountain. Here, its peculiar character becomes very obvious. The water is covered with a thin layer of the petroleum or mineral oil, giving it a foul appearance, as if coated with dirty molasses, having a yellowish brown colour. Every part of the water was covered by this film, but it had no where the iridescence which I recollect to have observed at St. Catharine's well, a petroleum fountain near Edinburgh, in Scotland; there the water was pellucid, and the hues, produced by the oil, were brilliant, giving the whole a beautiful appearance: the difference is, however, easily accounted for; St. Catharine's well is a lively, flowing fountain, and the quantity of petroleum is only sufficient to cover it partially, while there is nothing to soil the stream; in the present instance, the stagnation of the water, the comparative abundance of the petroleum, and the mixture of leaves and sticks, and other productions of a dense forest, preclude any beautiful features. There are, however, upon this water, here and there, spots of what seems to be a purer petroleum, probably recently risen, which is free from mixture, and which has a bright brownish yellow appearance,—lively and sparkling: were the fountain covered, entirely, with this purer production, it would be beautiful.

We were informed, that when the fountain is frozen, there is always some air-holes left open, and that in these the petroleum collects in unusual abundance and purity, having, distinctly, the beautiful appearance which has just been mentioned as now occurring, here and there, upon the water. The cause of this is easily understood; the petroleum being then protected, by the ice, from the impurities, which, at other times, fall into it, thus escapes contamination, and being directed to the air-holes, both by its levity and by the gas which mixes with it, it there collects in greater quantity and purity. All the sticks and leaves, and the ground itself around the fountain, are now rendered, more or less, adhesive, by the petroleum; and the rods and paddles which are used in the water, cannot be touched, without covering the hands with a tar-like coating.

They collect the petroleum by skimming it, like cream from a milk pan; for this purpose, they use a broad flat board, made thin at one edge, like a knife; it is moved flat upon, and just under the surface of the water, and is soon covered by a coating of the petroleum, which is so thick and adhesive that it does not fall off, but is removed by scraping the instrument upon the lip of a cup. It has then a very foul appearance, like very dirty tar or molasses, but it is purified by heating it and straining it, while hot, through flannel or other woolen stuff. It is used, by the people of the vicinity, for sprains and rheumatism, and for sores on their horses, it being, in both cases, rubbed upon the part. It is not monopolized by any one, but is carried away freely, by all who care to collect it, and for this purpose the Spring is frequently visited. I could not ascertain how much is annually obtained; the quantity must be considerable. It is said to rise more abundantly in hot weather than in cold. Gas is constantly escaping through the water, and appears in bubbles upon its surface; it becomes much more abundant and rises in large volumes whenever the mud at the bottom is stirred by a pole. We had no means of collecting or of firing it, but there can be no doubt that it is the carburetted hydrogen—probably the lighter kind, but rendered heavier and more odorous by holding a portion of the petroleum in solution; whenever it is examined we should of course expect to find carbonic acid gas mingled with it and not improbably azote or nitrogen. We could not learn that any one had attempted to fire the gas, as it rises, or to kindle the film of petroleum upon the water: it might form a striking night experiment.

We were told that an intoxicated Indian had fallen into the pool and been drowned, many years ago, and that his body had never been recovered; others doubted the truth of the story. Were it true, it would be a curious inquiry whether the antiseptic properties of the petroleum, (so well exemplified in the Egpytian mummies,) may not have preserved this body from putrefaction.

The history of this Spring is not distinctly known: the Indians were well acquainted with it, and a square mile around it is still reserved for the Senecas. As to the geological origin of the Spring, it can scarcely admit of a doubt, that it rises from beds of bituminous coal, below; at what depth we know not, but probably far down; the formation is doubtless connected with the bituminous coal of the neighbouring counties of Pennsylvania and of the west, rather than with the anthracite beds of the central parts of Pennsylvania.

A branch of the Oil Creek, which flows into the Allegany River, a principal tributary of the Ohio, passes near this Spring, and we crossed the rivulet in going to it; thus we had the pleasure of seeing water that was on its way to New Orleans and the Gulf of Mexico; we had just passed the Genesee, which flows into Lake Ontario, and is thus seeking the Atlantic through the St. Lawrence; and a little east, rise waters which flow to the Susquehannah and the Chesapeake Bay, and thus this elevated land, (said to be one thousand five hundred feet above the ocean level,) is a grand rain shed, for the supply of rivers, seeking their exit through very remote and opposite parts of the continent.

I cannot learn that any considerable part of the large quantities of petroleum used in the eastern states, under the name of Seneca oil, comes from the Spring now described. I am assured that its source is about one hundred miles from Pittsburgh, on the Oil Creek, which empties into the Allegany River in the township and county of Venango. It exists there in great abundance, and rises in purity to the surface of the water; by dams, enclosing certain parts of the river or creek, it is prevented from flowing away, and it is absorbed by blankets, from which it is wrung. Although I have this statement from an eye witness,* still it would be an interesting service, claiming a grateful acknowledgment, if some gentleman in the vicinity of the petroleum, or at Pittsburgh, would furnish an account of it for this or some similar journal; and as there are numerous Springs of this mineral oil in various regions of the west and south-west, connected especially with the saline and bituminous coal formations, it would promote the cause of science, if notices of any of them were forwarded for publication.

The petroleum, sold in the eastern states, under the name of Seneca oil, is of a dark brown colour, between that of tar and molasses, and its degree of consistence is not dissimilar, according to the temperature; its odour is strong and too well known to need description.

I have frequently distilled it in a glass retort, and the naptha which collects in the receiver is of a light straw colour, and much lighter, more odorous and inflammable than the petroleum; in the first distillation, a little water usually rests in the receiver, at the bottom of the naptha; from this, it is easily decanted, and a second distillation prepares it perfectly for preserving potassium and sodium, the object which has led me to distil it, and these metals I have kept under it (as others have done) for years; eventually they acquire some oxygen, from or through the naptha, and the exterior portion of the metal returns, slowly, to the condition of alkali—more rapidly, if the stopper is not tight.

The petroleum remaining from the distillation, is thick like pitch; if the distillation has been pushed far, the residuum will flow only languidly in the retort, and in cold weather it becomes a soft solid, resembling much the maltha or mineral pitch.

The famous lake of maltha and petroleum, in the island of Trinidad, is well known: I have specimens from that place, in all the conditions between fluid, petroleum and firm pitch. It is unnecessary to repeat, that the English use it on their ships of war, as a substitute for tar and pitch, and that the bituminous mass in the natural lake, (which covers several square miles,) is sufficiently tenacious to support a man, during the colder part of the year, but at the opposite season is too soft to sustain any considerable weight.

In alluding to the probable connexion, with bituminous coal, of the Oil Spring named at the head of this notice, I did not mean to imply that petroleum and other bituminous substances *necessarily prove*, that there is coal beneath; for it has been ascertained that bitumen exists, in a limited degree, in many minerals, as appears from some of the phenomena of volcanos, and was proved experimentally by the late Hon. George Knox, in an extensive series of researches, published in the Philosophical Transactions of London. As regards the probability of finding coal, the opinion should be thus modified; if the country on whose waters, or in whose rocks, petroleum or other varieties of bitumen appear, is such an one as, in its geological structure, is consistent with the usual associations of coal, then the existence of bitumen, especially if it be abundant, and more especially if the rocks themselves are impregnated with it, affords a strong presumption in favour of the existence of coal beneath. Such is the fact in this part of the State of New-York. The shale at Genesco is highly bituminous and burns readily, with abundant flame. I cannot answer for the rocks in the immediate vicinity of the Oil Spring, as they are not in view. The people have dug a few feet for coal at the distance of a few yards from the Spring; the excavation is too shallow to decide any thing, except that the petroleum rose in this place also, as the Spring, thus proving, that the bituminous impregnation is not peculiar to that spot.

If these remarks should excite any interest in the minds of landed proprietors in that vicinity, I would venture to suggest to them, that it would not be wise, without more evidence, to proceed to sink shafts; for they would be very expensive and might be fruitless. It would be much wiser, *to bore;* which would enable them, at a comparatively moderate expense, to ascertain the existence, depth and thickness of the coal, should it exist; but, even this should not be done without a previous diligent examination of water courses, banks, precipices, excavations for wells, cellars, roads, &c., which might perhaps materially aid the inquiry. The well known existence of bituminous coal beds at the distance of a few miles in Pennsylvania, renders it highly probable that they may pass under this region, but perhaps at too great a depth to admit of profitable extraction; for the abundance of coal in other parts of Pennsylvania and the west;—the magnitude and easy accessibleness of the beds, and the excellence of the coal, will long render it impossible that thin beds, in other

* Mr. Ovid Hard, stage proprietor, of Rochester, N. Y., who mentioned Mr. J. L. Chase, residing on the Oil Creek, Venango County, Penn., as a gentleman from whom exact information may be obtained.

parts of the country, especially if lying deep in the ground, should be wrought without ruinous expenditure.

It is worthy of remark, that the cattle drink, freely, of the waters of the Oil Springs, a fact which we should hardly expect, since they are so foul, and since there is abundance of pure water near; and also because we should expect that the petroleum would render the water very disgusting to animals; perhaps they may find in this fountain, something of the reputed virtues of tar water; I could not learn that birds ever light upon or near the Spring; the mephtic gases might, perhaps, make it *a real Avernus*, to them.

The present depth of the Petroleum Spring is but a few feet. It is scarcely necessary to add, that, in accordance with the usual state of popular impression in similar cases, it is confidently asserted here, that the Oil Spring, was, when first known, *literally a bottomless pit;* we may, however, safely conclude, that it was then much deeper than at present. When I asked a plain man, in the vicinity, how he imagined it was first formed, he replied, that he believed the *gas-air*, (as he called it,) blew up the ground at a time when the fountain first rose, and that the flow of water and gas had preserved it ever since, although it had been greatly filled and clogged by earth and other substances, falling or thrown into the cavity. I shall not attempt to substitute any theory of my own, for this indigenous hypothesis, of an uninstructed man, who certainly reasoned ingeniously, if not conclusively. I presume he had never heard either of Pluto or Neptune, and therefore drew his conclusions from his own mind and not from any geological theory.—*Silliman's Journal.*

BIG BONE LICK, KENTUCKY.

No place, perhaps, in the western country, is so interesting to the geologist, as Big Bone Lick, in Kentucky. This wonderful spot is a small valley situated twenty miles south-west of Cincinnati, and two from the Ohio river. In a number of places, the ground is so soft for several rods, that a pole may, with ease, be thrust down many feet. In these soft places, saline and sulphurous mineral waters arise.* The earth around these places is dry and solid.

The ground for several rods around these springs, is entirely without vegetation, owing to the salt with which it is impregnated; and a manufactory of salt was formerly established here, but it is now discontinued.

This was formerly the rendezvous of vast herds of quadrupeds. Their trails, when the country was first settled, extended from the Lick, for miles in several directions, like the roads from a metropolis. Vast numbers of these quadrupeds perished in the quagmire; some probably were slain in battles of emulation and ferocity, and many more were destroyed by carnivorous animals. Here are now found the bones of the mastodon, elephant, buffalo, elk, and of other, and now unknown animals; they are in immense quantities—it is a complete charnel-house. The bones are generally under ground, and so numerous that you cannot dig a hole, to the depth at which they are usually found, without striking them. They are, however, generally bones of the buffalo.

On the east side of a rivulet that runs near the principal spring they lie in a horizontal stratum, three feet below the surface where the ground is lowest, and eleven, where the ground is eight feet higher. As the ground is dry and solid over this stratum, it cannot be supposed that the bones have sunk through to its present level. Their position also excludes such a supposition, each bone lying horizontally, and the stratum also being horizontal. If the bones had descended when the ground was soft, it cannot be supposed that they would have arranged themselves into a horizontal stratum irrespective of the unevenness of the ground, and of the various depths, three and eleven feet, necessary to attain this horizontal range. It is therefore evident, that this part of the valley was level when these bones were deposited, that they lay on the surface and were subsequently covered with earth. As they have been covered without being displaced, or the horizontal position of each bone, or of the stratum, disturbed, the only admissible supposition is, that they have been covered by an inundation. They must have been long accumulating; for there has been no accumulation since that event, which bears any comparison for quantity, with those thus imbedded. The inference also seems warranted, that quadrupeds have never been equal, either in number or variety, since that inundation, to what they were previously to it. As many of these bones are in a good state of preservation, we are led to conclude that the water has retired from the valley of the Mississippi at a later period, than it has from the Atlantic States: for although it is capable of demonstration, that these states have been inundated, yet the facts which constitute that demonstration, indicate also an earlier period.

The foregoing discussion relates to a part only of this valley; for the ground on the opposite side of the rivulet, is higher and presents a different class of phenomena.

* The waters are beneficial to health; but the place is not much resorted to.

There the bones lie at promiscuous depths, without any stratification. We must, therefore, suppose that some other agent, than an inundation with its deposits, has contributed to the latter phenomena.

It may excite surprise, that these bones, which have lain here a thousand years, and perhaps thousands of years, should yet be in a state of entire preservation. But when it is recollected, that the earth here is strongly impregnated with salt, and when it is stated, that many of these bones are now entirely petrified, that surprise will be diminished.

Only a small part of the earth which contains these fossils, has yet been dug over. For centuries to come, these enormous bones, which have been the wonder of naturalists, will still be found.

Captain Phinnel, who keeps the boarding-house in this watering place, informed the writer, that he found within a space not more than six feet square, at the depth of three feet, thirty-two grinder-teeth of the mastodon and elephant, one of which, he said, weighed fourteen pounds. They were all at one depth, and were supposed to have been collected in that spot, as they have never been found numerous in any other.

In the possession of that gentleman, I saw a large bone, twenty-six inches in length, and weighing about sixteen pounds, entirely petrified, which has never belonged to any of the mastodon or elephant species, but to some animal now unknown. It has been part of the leg of a quadrupid, between the knee and the pastern joints. It resembled in shape the bone of a hare, except being larger in proportion to its length. The quadruped to which it belonged was eleven feet high.—*Ibid.*

THE VALLEY OF DEATH, IN THE ISLAND OF JAVA.

By A. Loudon, Esq.

My Dear Sir,—The following is an extract from my journal of a tour through the Islands of Java and Madara last year:—

"*Balor, 3d July*, 1830.—This evening, while walking round the village with the Patteh (native chief,) he told me that there is a valley three miles from Balor, that no person could approach without forfeiting their lives, and that the skeletons of human beings, and all sorts of beasts and birds, covered the bottom of the valley. I mentioned this to the Commandant Mr. Van Spreewenberg, and proposed our going to see it; Mr. Daendels, the assistant-resident, agreed to go with us. At this time I did not credit all that the Javanese Chief told me. I knew that there was a lake close to this, that it was dangerous to approach too near, but I had never heard of the Valley of Death.

"*Balor, 4th July.*—Early this morning we made an excursion to the extraordinary valley, called by the natives *Guwo Upas*, or *Poisoned Valley:* it is three miles from Balor, on the road to the Djiang. Mr. Daendels had ordered a footpath to be made from the main road to the valley. We took with us two dogs and some fowls, to try experiments in this poisonous hollow. On arriving at the foot of the mountain, we dismounted and scrambled up the side, about a quarter of a mile, holding on by the branches of trees, and we were a good deal fatigued before we got up the path, being very steep and slippery, from the fall of rain during the night. When within a few yards of the valley we experienced a strong nauseous suffocating smell, but, on coming close to the edge, this disagreeable smell left us. We were now all lost in astonishment at the awful scene before us. The valley appeared to be about half a mile in circumference, oval, and the depth from 30 to 35 feet, the bottom quite flat,—no vegetation,—some very large, in appearance, river-stones, and the whole covered with the skeletons of human beings, tigers, pigs, deer, peacocks, and all sorts of birds. We could not perceive any vapour or any opening in the ground, which last appeared to be of a hard sandy substance. The sides of the valley from the top to the bottom are covered with trees, shrubs, &c. It was now proposed by one of the party to enter the valley; but at the spot where we were, this was difficult, at least for me, as one false step would have brought us to eternity, as no assistance could be given. We lighted our cigars, and, with the assistance of a bamboo, we went down within 18 feet of the bottom. Here we did not experience any difficulty in breathing, but an offensive nauseous smell annoyed us. We now fastened a dog to the end of a bamboo, 18 feet long, and sent him in; we had our watches in our hands, and in 14 seconds he fell on his back, did not move his limbs or look round, but continued to breathe 18 minutes. We then sent in another, or rather he got loose from the bamboo, but walked in to where the other dog was lying: he then stood quite still, and in 10 seconds he fell on his face, and never moved his limbs afterwards: he continued to breathe for 7 minutes. We now tried a fowl, which died in 1½ minute. We threw in another, which died before touching the ground. During these experiments we experienced a heavy shower of rain; but we were so interested by the awful scene before us, that we did not care for getting wet. On the opposite side, near

a large stone, was the skeleton of a human being, who must have perished on his back, with the right arm under the head, from being exposed to the weather, the bones were bleached as white as ivory. I was anxious to procure this skeleton, but any attempt to get at it would have been madness. After remaining two hours in this Valley of Death, we returned, but found some difficulty in getting out. From the heavy shower, the sides of the valley were very slippery, and had it not been for two Javanese behind us, we might have found it no easy matter to escape from this pestilential spot. On reaching our rendezvous we had some brandy and water, and left this most extraordinary valley, came down the slippery footpath, sometimes on our hams and hands to the main road, mounted our horses, and returned to Balor, quite pleased with our trip. The human skeletons are supposed to have been rebels, who had been pursued from the main road, and taken refuge in the different valleys, as a wanderer cannot know his danger till he is in the valley, and when once there, one has not the power or presence of mind to return.

"There is a great difference between this valley and the *Grotto del Cano*, near Naples, where the air is confined to a small aperture; while here the circumference is fully half a mile, and not the least smell of sulphur, nor any appearance of an eruption ever having taken place near it, although I am aware that the whole chain of mountains is volcanic, as there are two craters at no great distance from the side of the road at the foot of the Djienz, and they constantly emit smoke."—Fahr. 52°

"In the 8th volume of the proceedings of the Batavian Society of Arts and Sciences, Dr. Horsefield of the East India House, gives a description of the mineral constitution of the different mountains of Java. He examined several parts of the chain of hills, and states that he heard of this valley, but that he could not prevail on the natives to show him where it was. I have sent the Doctor a copy of the above extract."—*Edin. Phil. Jour.*

THE COUGAR.

There is an extensive Swamp in the section of the State of Mississippi, which lies partly in the Choctaw territory. It commences at the borders of the Mississippi, at no great distance from a Chicasaw village, situated near the mouth of a creek known by the name of Vanconnah, and partly inundated by the swellings of several large bayous, the principal of which, crossing the swamp in its whole extent, discharges its waters not far from the mouth of the Yazoo River. This famous bayou is called False River. The swamp of which I am speaking follows the windings of the Yazoo, until the latter branches off to the north-east, and at this point forms the stream named Cold Water River, below which the Yazoo receives the draining of another bayou inclining towards the north-west, and intersecting that known by the name of False River, at a short distance from the place where the latter receives the waters of the Mississippi. This tedious account of the situation of the swamp, is given with the view of pointing it out to all students of nature who may chance to go that way, and whom I would earnestly urge to visit its interior, as it abounds in rare and interesting productions: birds, quadrupeds and reptiles, as well as molluscous animals, many of which, I am persuaded, have never been described.

In the course of one of my rambles, I chanced to meet with a squatter's cabin on the banks of the Cold Water River. In the owner of this hut, like most of those adventurous settlers in the uncultivated tracts of our frontier districts, I found a person well versed in the chase, and acquainted with the habits of some of the larger species of quadrupeds and birds. As he who is desirous of instruction ought not to disdain listening to any one who has knowledge to communicate, however humble may be his lot, or however limited his talents, I entered the squatter's cabin, and immediately opened a conversation with him respecting the situation of the swamp, and its natural productions. He told me he thought it the very place I ought to visit, spoke of the game which it contained, and pointed to some bear and deer skins, adding that the individuals to which they had belonged formed but a small portion of the number of those animals which he had shot within it. My heart swelled with delight, and on asking if he would accompany me through the great morass, and allow me to become an inmate of his humble but hospitable mansion, I was gratified to find that he cordially assented to all my proposals. So I immediately unstrapped my drawing materials, laid up my gun, and sat down to partake of the homely but wholesome fare intended for the supper of the squatter, his wife, and his two sons.

The quietness of the evening seemed in perfect accordance with the gentle demeanour of the family. The wife and children, I more than once thought, seemed to look upon me as a strange sort of person, going about, as I told them I was, in search of birds and plants; and were I here to relate the many questions which they put to me in return for those which I addressed to them, the catalogue would occupy several pages. The husband, a native of Connecticut, had heard of the existence of such men as myself, both in our own country and abroad, and seemed greatly pleased to have me under his roof. Supper over,

I asked my kind host what had induced him to remove to this wild and solitary spot. "The people are growing too numerous now to thrive in New-England," was his answer. I thought of the state of some parts of Europe, and calculating the denseness of their population compared with that of New England, exclaimed to myself, "How much more difficult must it be for men to thrive in those populous countries!" The conversation then changed, and the squatter, his sons and myself, spoke of hunting and fishing, until at length tired, we laid ourselves down on pallets of bear skins, and reposed in peace on the floor of the only apartment of which the hut consisted.

Day dawned, and the squatter's call to his hogs, which, being almost in a wild state, were suffered to seek the greater portion of their food in the woods, awakened me. Being ready dressed, I was not long in joining him. The hogs and their young came grunting at the well known call of their owner, who threw them a few ears of corn, and counted them, but told me that for some weeks their number had been greatly diminished by the ravages committed upon them by a large *Panther*, by which name the Cougar is designated in America, and that the ravenous animal did not content himself with the flesh of his pigs, but now and then carried off one of his calves, notwithstanding the many attempts he had made to shoot it. The *Painter*, as he sometimes called it, had on several occasions robbed him of a dead deer; and to these exploits the squatter added several remarkable feats of audacity which it had performed, to give me an idea of the formidable character of the beast. Delighted by his description, I offered to assist him in destroying the enemy, at which he was highly pleased, but assured me that unless some of his neighbours should join us with their dogs and his own, the attempt would prove fruitless. Soon after, mounting a horse, he went off to his neighbours, several of whom lived at a distance of some miles, and appointed a day of meeting.

The hunters, accordingly, made their appearance, one fine morning, at the door of the cabin, just as the sun was emerging from beneath the horizon. They were five in number, and fully equipped for the chase, being mounted on horses, which in some parts of Europe might appear sorry nags, but which in strength, speed and bottom, are better fitted for pursuing a cougar or a bear through woods and morasses than any in that country. A pack of large ugly curs were already engaged in making acquaintance with those of the squatter. He and myself mounted his two best horses, whilst his sons were bestriding others of inferior quality.

Few words were uttered by the party until we had reached the edge of the Swamp, where it was agreed that all should disperse and seek for the fresh track of the Painter, it being previously settled that the discoverer should blow his horn, and remain on the spot until the rest should join him. In less than an hour, the sound of the horn was clearly heard, and, sticking close to the squatter, off we went through the thick woods, guided only by the now and then repeated call of the distant huntsman. We soon reached the spot, and in a short time the rest of the party came up. The best dog was sent forward to track the Cougar, and in a few moments the whole pack were observed diligently trailing, and bearing in their course for the interior of the Swamp. The rifles were immediately put in trim, and the party followed the dogs, at separate distances, but in sight of each other, determined to shoot at no other game than the Panther.

The dogs soon began to mouth, and suddenly quickened their pace. My companion concluded that the beast was on the ground, and putting our horses to a gentle gallop, we followed the curs, guided by their voices. The noise of the dogs increased, when all of a sudden their mode of barking became altered, and the squatter, urging me to push on, told me that the beast was *treed*, by which he meant that it had got upon some low branch of a large tree to rest for a few moments, and that should we not succeed in shooting him when thus situated, we might expect a long chase of it. As we approached the spot, we all by degrees united into a body, but on seeing the dogs at the foot of a large tree, separated again and galloped off to surround it.

Each hunter now moved with caution, holding his gun ready, and allowing the bridle to dangle on the neck of his horse, as it advanced slowly towards the dogs. A shot from one of the party was heard, on which the Cougar was seen to leap to the ground, and bound off with such velocity, as to show that he was very unwilling to stand our fire longer. The dogs set off in pursuit with great eagerness and a deafening cry. The hunter who had fired came up and said that his ball had hit the monster, and had probably broken one of his fore-legs near the shoulder, the only place at which he could aim. A slight trail of blood was discovered on the ground, but the curs proceeded at such a rate that we merely noticed this, and put spurs to our horses, which galloped on towards the centre of the Swamp. One bayou was crossed, then another still larger and more muddy; but the dogs were brushing forward, and as the horses began to pant at a furious rate, we judged it expedient to leave them and advance on foot. These determined hunters knew that the Cougar being wounded, would shortly ascend another tree, where in all probability he would remain for a considerable time, and that it would be easy to follow the track of the dogs. We

dismounted, took off the saddles and bridles, set the bells attached to the horses' necks at liberty to jingle, hoppled the animals, and left them to shift for themselves.

Now, reader, follow the group marching through the Swamp, crossing muddy pools, and making the best of their way over fallen trees and amongst the tangled rushes that now and then covered acres of ground. If you are a hunter yourself, all this will appear nothing to you; but if crowded assemblies of "beauty and fashion," or the quiet enjoyment of your "pleasure-grounds," alone delight you, I must mend my pen before I attempt to give you an idea of the pleasure felt on such an expedition.

After marching for a couple of hours, we again heard the dogs. Each of us pressed forward, elated at the thought of terminating the career of the Cougar. Some of the dogs were heard whining, although the greater number barked vehemently. We felt assured that the Cougar was treed, and that he would rest for some time to recover from his fatigue. As we came up to the dogs, we discovered the ferocious animal lying across a large branch, close to the trunk of a cotton-wood tree. His broad breast lay towards us; his eyes were at one time bent on us and again on the dogs beneath and around him; one of his fore-legs hung loosely by his side, and he lay crouched, with his ears lowered close to his head, as if he thought he might remain undiscovered. Three balls were fired at him, at a given signal, on which he sprang a few feet from the branch, and tumbled headlong to the ground. Attacked on all sides by the enraged curs, the infuriated Cougar fought with desperate valour; but the squatter advancing in front of the party, and almost in the midst of the dogs, shot him immediately behind and beneath the left shoulder. The Cougar writhed for a moment in agony, and in another lay dead.

The sun was now sinking in the west. Two of the hunters separated from the rest, to procure venison, whilst the squatter's sons were ordered to make the best of their way home, to be ready to feed the hogs in the morning. The rest of the party agreed to camp on the spot. The Cougar was despoiled of its skin, and its carcass left to the hungry dogs. Whilst engaged in preparing our camp, we heard the report of a gun, and soon after one of our hunters returned with a small deer. A fire was lighted, and each hunter displayed his *pone* of bread, along with a flask of whiskey. The deer was skinned in a trice, and slices placed on sticks before the fire. These materials afforded us an excellent meal, and as the night grew darker, stories and songs went round, until my companions, fatigued, laid themselves down, close under the smoke of the fire, and soon fell asleep.

I walked for some minutes round the camp, to contemplate the beauties of that nature, from which I have certainly derived my greatest pleasures. I thought of the occurrences of the day, and glancing my eye around, remarked the singular effects produced by the phosphorescent qualities of the large decayed trunks which lay in all directions around me. How easy, I thought, would it be for the confused and agitated mind of a person bewildered in a Swamp like this, to imagine in each of these luminous masses some wondrous and fearful being, the very sight of which might make the hair stand erect on his head. The thought of being myself placed in such a predicament burst over my mind, and I hastened to join my companions, beside whom I laid me down and slept, assured that no enemy could approach us without first arousing the dogs, which were growling in fierce dispute over the remains of the Cougar.

At daybreak we left our camp, the squatter bearing on his shoulder the skin of the late destroyer of his stock, and retraced our steps until we found our horses, which had not strayed far from the place where we had left them. These we soon saddled, and jogging along, in a direct course, guided by the sun, congratulating each other on the destruction of so formidable a neighbour as the Panther had been, we soon arrived at my host's cabin. The five neighbours partook of such refreshments as the house could afford, and dispersing, returned to their homes, leaving me to follow my favourite pursuits.

INDIAN CORN.

This grain, so important to the agricultural interests of the United States, appears to be of uncertain origin. Fuchs very early maintained that it came from the east, and Mathioli affirmed that it was from America. Regmir and Gregory have presented fresh arguments in favour of its eastern origin. Among them is the name by which it has been long known in Europe, *blé de Turquie*, and varieties, it is said, have been brought from the Isle of France, or from China. Moreau de Jonnes, on the contrary, has recently maintained in a memoir read before the Academy of Science, that its origin was in America. The name *blé de Turquie* no more proves it to be of Turkish origin than the name of *Italian poplar* proves that that tree grew wild in Italy. It can only signify that it spread from Turkey into the neighbouring countries. Its general cultivation in southern Europe, and the production of some new varieties, proves nothing with regard to the country of the species.

In favour of its American origin, is the fact that it was

found in a state of cultivation in every place where the first navigators landed; in Mexico, according to Hernandiz, and in Brazil according to Zeri, and that in the various countries, it had proper names. Such as *Maize*, *Flaolli*, &c. while in the old world its names were either all of American origin, or names of the neighbouring region whence it was immediately derived, and that immediately after the discovery of America, it spread rapidly in the old world and soon became common, a fact not reconcilable with the idea of its former existence there.

To these proofs Aug. de Saint Hilaire has added another. He has received from M. de Larranhaga of Montevideo, a new variety of Maize distinguished by the name of Tunicata, because instead of having the grains naked they are entirely covered by the glumes. This variety is from Paraguay, where it is cultivated by the Guaycurus Indians, a people in the lowest scale of civilization, and where, according to the direct testimony of one of them, it grows in the humid forests as a native production.

[*Bib. Univ. Jan.* 1830.

EFFECT OF CERTAIN MINERAL POISONS ON LIVING PLANTS.

By Dr. Hare.

In order to destroy the caterpillars which feed upon them so ravenously, I was desirous of ascertaining how far certain poisonous solutions could be introduced into the circulation of plants without injury to them. Having cut off a few twigs from a Linden tree, I introduced a twig, with its leaves attached, into different phials of water, severally impregnated with iron, copper and arsenic; also one into pure water. That introduced into the ferruginous solution, died in about twenty-four hours. The twig exposed to the copper lost its proper hue and looked sickly in about two or three days, and finally appeared dead in about five days. Nearly five days had elapsed before the twig in the arsenious acid, although saturated, became sensibly injured, and even then it was only changed in colour. During the first three days no difference could be perceived between the leaves of the twig here mentioned and that sustained by pure water. It would appear from these experiments that metallic solutions are poisonous to a vegetable in the inverse order from that in which they affect animals, and that small portions of arsenic may be introduced into trees, so as to be poisonous to the insects which destroy their foliage. On macerating a leaf of the twig in the arsenious solution, only about forty-five hours after it was introduced into it, the water to which it was subjected gave with the ammoniacle nitrate of silver a yellow precipitate, and after five or six days, this experiment being repeated, a copious precipitation ensued, indicating arsenite of silver. Caterpillars put upon the leaves impregnated with the arsenic died in a day or two, excepting one which was too far advanced to eat. These observations in your Journal, so hastily made and described, may need some indulgence from your readers.—*Silliman's Jour.*

QUALITIES OF THE DOG.

The dog is not only the friend of man, but the defender of the oppressed. In the wise order of the creation, this animal seems always to have been designed to be the friend and companion of man, his fellow-traveller, the follower of his fortunes, (and he never deserts him as our fellow man does,) his watch, and the minister to his wants and pleasures, inasmuch as he is essential to the hunter in procuring at once his food and his amusement, and, if allowed to plunder, is no bad caterer in time of necessity. So many proofs exist to bear us out in this statement—so many examples of high courage and unshaken fidelity—that it would be superfluous to enlarge upon this subject. We are now about to give a farther proof of the high qualities of the dog, by showing him the avenger of wrong and the defender of the oppressed, and that not towards man, his lord and master, his patron and benefactor—him whom he loves and fears, and on whom he depends—but towards one of the brute creation, not of his own species, but of one with which no common animal sympathies could subsist, and which is generally deemed wholly at variance with the canine race; in a word, the Cat.—Not to trespass further on our sporting brothers' time, nor to wear out the indulgence of our reader, we shall simply detail a scene that took place at Liverpool some years back, the proofs of which still exist, together with the living animals which furnish the following story.

An ill-fated cat fell into the hands of some juvenile ruffians, commencing the first stage of cruelty, which often leads to great crimes and to an ignominious end: the little wretches had passed from cruelty to cruelty, alternately stoning their victim and dragging it through a dirty pool of water, then beating and bruising it, and menacing it with drowning. Bipeds passed by, unheeding the agonised animal's cries of distress, which were now nearly coming to a close with its life, when a feeling quadruped came forward to save it. The Dog, having contemplated for some time this scene of inhumanity, and barked his

GANNET
(YOUNG.)

GANNET
(ADULT.)

disapprobation thereof, rushed forward upon the young assassins, and, driving them one by one furiously off the spot, sprang to the rescue of the fainting and bleeding animal, and withdrawing it from the deep ditch, bore it off in triumph to his quarters. There, extending it upon straw, and licking it all over, he recalled the vital spark, and then, laying himself down upon it, restored it to some degree of ease from the warmth imparted to it. After this, the kind and feeling Dog fetched provision to his sick charge, and the people of the house, inspired by the example of the minor animal, gave it warm milk. Day after day did the Dog tend the sick object of his care, until it was perfectly recovered, and they are both to be seen at this day, after a long lapse of years, at the Talbot Inn, Liverpool.—These lessons from the brute creation to him who proudly calls himself the effigy of the Divinity, are humiliating, but may be useful to the many who need them.—*London Sporting Magazine.*

THE GANNET.

PELECANUS BASSANUS.

[Plate XVIII. Vol. 2.—Young and adult.]

Pelecanus Bassanus, Linn. *Syst.* 217. *Anser Bassanus*, Gesner *av.* 163. *Solan Goose* Will. *Orn.* 328. Raii. *Syn. av.* 122, *Martins Voy. St. Kilda*, 27, *Descript. West. Isles*, 281. *Sula Bassana le Fou de Bassan* Brisson *av.* vi. 503, *tab.* 44. *Jaen. Van Gent. Martin's Spitsberg*, 97. *Sula. Horeri Cluf. ex* 367, *Hector Boeth.* 6. *Norvegis Sule, Hav.—Sul.* Brunnich, 124, *Pennant, British Zool. Vol.* 2. *p.* 518, *Pl.* 103, *White's Ed.*—J. Doughty's Collection.

The Gannet, although a frequent visiter of our seashore, has thus far been unnoticed in American works on ornithology. It is now for the first time pictured in the accompanying plate, and is represented in the young and adult stages of existence. The young Gannet was for a long time mistaken, and described by some naturalists as another species, but lately these errors have been corrected.

The writer has never seen the Gannet in the Philadelphia markets, but obtained a very fine specimen from New-York, to which place they are often brought for sale, more frequently, however, in the younger state. On the south side of Long Island, in the month of October, the Gannets appear in numbers, but mostly in company with the velvet and scoter ducks, and come and depart regularly with these birds to and from their feeding grounds.

The Gannet is strong on the wing, especially in windy weather, and is seldom seen inside of the surf, but is mostly sailing over the waters, in order to discover and strike its prey. This bird is very awkward on foot, in consequence of the shortness of the legs and their position; being placed far behind, which necessarily causes the bird to walk nearly upright, like the corvorant; the tail, which extends beyond the feet, is always ragged or worn at the end, by being dragged on the ground by the bird when walking on the beach. For a more ample history and description of the Gannet, the following is selected from Pennant's British Zoology.

"This species weighs seven pounds: the length is three feet one inch; the breadth six feet two inches. The bill is six inches long, straight almost to the point, where it inclines down; and the sides are irregularly jagged, that it may hold its prey with more security: about an inch from the base of the upper mandible is a sharp process pointing forward; it has no nostrils; but in their place a long furrow, that reaches almost to the end of the bill: the whole is of a dirty white, tinged with ash colour. The tongue is very small, and placed low in the mouth: a naked skin of a fine blue surrounds the eyes, which are of a pale yellow, and are full of vivacity: this bird is remarkable for the quickness of its sight: Martin tells us that Solan is derived from an Irish word expressive of that quality.

"From the corner of the mouth is a narrow slip of black bare skin, that extends to the hind part of the head: beneath the chin is another, that like the pouch of the *Pelecan*, is dilatable, and of size sufficient to contain five or six entire herrings; which, in the breeding season, it carries at once to its mate or young.

"The neck is very long: the body flat, and very full of feathers: the crown of the head, and a small space on the hind part of the neck is buff coloured: the rest of the plumage is white, the bastard wing and greater quill-feather excepted, which are black; the legs and toes are black; but the fore part of both are marked with a stripe of fine pea green. The tail consists of twelve sharp pointed feathers, the middle of which is the longest.

"The young birds, during the first year, differ greatly in colour from the old ones; being of a dusky hue, speckled with numerous triangular white spots; and at that time resemble in colours the speckled Diver. Each bird, if left undisturbed, would only lay one egg in the year; but if that be taken away, they will lay another; if that is also taken, then a third; but never more that season: a wise provision of nature, to prevent the extinction of the species by

accidents, and to supply food for the inhabitants of the places where they breed. Their egg is white, and rather less than that of the common goose: the nest is large, and formed of any thing the bird finds floating on the water, such as grass, sea plants, shavings, &c. These birds frequent the Isle of Ailsa, in the Firth of Clyde; the rocks adjacent to St. Kilda, the Stack of Souliskery, near the Orkneys; the Skelig Isles, off the coasts of Kerry Ireland, and the Bass Isle, in the Firth of Edinburgh: the multitudes that inhabit these places are prodigious. Dr. Harvey's elegant account of the latter, will serve to give some idea of the numbers of these, and of the other birds that annually migrate to that little spot.

"There is a small island, called by the Scotch, Bass Island, not more than a mile in circumference; the surface is almost wholly covered during the months of May and June with nests, eggs, and young birds; so that it is scarcely possible to walk without treading on them: and the flocks of birds in flight are so prodigious, as to darken the air like clouds; and their noise is such, that you cannot, without difficulty, hear your next neighbour's voice. If you look down upon the sea, from the top of the precipice, you will see it on every side covered with infinite numbers of birds of different kinds, swimming and hunting for their prey: if in sailing round the island you survey the hanging cliffs, you may see in every crag or fissure of the broken rocks, innumerable birds of various sorts and sizes, more than the stars of heaven when viewed in a serene night: if from afar you see the distant flocks, either flying to or from the island, you would imagine them to be a vast swarm of bees.

"Nor do the rocks of St. Kilda seem to be less frequented by these birds; for Martin assures us, that the inhabitants of that small island consume annually no less than 22,600 young birds of this species, besides an amazing quantity of their eggs; these being their principal support throughout the year; they preserve both eggs and fowls in small pyramidal stone buildings, covering them with turf ashes, to preserve them from moisture. This is a dear bought food, earned at the hazard of their lives, either by climbing the most difficult and narrow paths, where (to appearance) they can barely cling, and that too, at an amazing height over the raging sea: or else being lowered down from above, they collect their annual provision, thus hanging in mid way air; placing their whole dependence on the uncertain footing of one person who holds the rope, by which they are suspended at the top of the precipice. The young birds are a favourite dish with the North Britons in general: during the season they are constantly brought from the Bass Isle to Edinburgh, sold at 20*d.* a piece, are roasted, and served up a little before dinner as a whet.

"The Gannets are birds of passage. Their first appearance in those islands is in March; their continuance there till August or September, according as the inhabitants take or leave their first egg; but in general, the time of breeding, and that of their departure, seems to coincide with the arrival of the herring, and the migration of that fish, (which is their principal food,) out of those seas. It is probable that these birds attend the herring and pilchard during their whole circuit round the British islands; the appearance of the former being always esteemed by the fishermen as a sure presage of the approach of the latter. It migrates in quest of food as far south as the mouth of the Tagus, being frequently seen off Lisbon during the month of December, plunging for Sardinœ, fish resembling, if not the same with our Pilchard.

"I have in the month of August observed in Cathness their northern migrations: I have seen them passing the whole day in flocks, from five to fifteen in each: in calm weather they fly high; in storms they fly low and near the shore; but never cross over the land, even when a bay with its promontories intervenes, but follow, at an equal distance, the course of the bay, and regularly double every cape. I have seen many of the parties make a sort of halt for the sake of fishing: they soared to a vast height, then darting headlong into the sea, made the water foam and spring up with the violence of their descent; after which they pursued their route. I inquired whether they ever were observed to return southward in the spring, but was answered in the negative; so it appears that they annually encircle the whole island.

"They are well known on most of our coasts; but not by the name of the Soland-Goose. In Cornwal and in Ireland they are called Gannets by the Welsh Gan. The excellent Mr. Ray supposed the Cornish Gannet to be a species of large Gull; a very excusable mistake, for during his six months residence in Cornwal, he never had an opportunity of seeing that bird, except flying; and in the air it has the appearance of a gull. On that supposition he gave our Skua, p. 417, the title of Cataracta, a name borrowed from Aristotle, and which admirably expresses the rapid descent of this bird on its prey. Mr. Moyle first detected this mistake; and the Rev. Doctor William Borlase, by presenting us with a fine specimen of this bird, confirms the opinion of Mr. Moyle; at the same time he favoured us with so accurate an account of some part of the natural history of this bird, that we shall use the liberty he indulged us with, of adding it to this description.

"The Gannet comes on the coasts of Cornwal in the latter end of summer, or beginning of autumn; hovering over the shoals of pilchards that come down to us through St. George's Channel from the northern seas. The Gannet seldom comes near the land, but is constant to its prey, a sure sign to the fisherman that the pilchards are on the coasts; and when the pilchards retire, generally about the end of November, the Gannets are seen no more. The bird now sent was killed at Chandour, near Mountsbay, Sept. 30, 1762, after a long struggle with a water spaniel, assisted by the boatmen; for it was strong and pugnacious. The person who took it observed that it had a transparent membrane under the eye-lid, with which it covered at pleasure the whole eye, without obscuring the sight or shutting the eye-lid; a gracious provision for the security of the eyes of so weighty a creature, whose method of taking its prey is by darting headlong on it from a height of a hundred and fifty feet or more into the water. About four years ago, one of these birds flying over Penzance, (a thing that rarely happens,) and seeing some pilchards lying on a fir-plank, in a cellar used for curing fish, darted itself down with such violence, that it struck its bill quite through the board, (about an inch and a quarter thick,) and broke its neck.

"These birds are sometimes taken at sea by a deception of the like kind. The fishermen fasten a pilchard to a board, and leave it floating; which inviting bait decoys the unwary Gannet to its own destruction.

"In the Chataracta of Fuba may be found many characters of this bird: he says, that the bill is toothed: that its eyes are fiery; and that its colour is white: and in the very name is expressed its furious descent on its prey. The rest of his account savours of fable.

"We are uncertain whether the Gannet breeds in any other parts of Europe besides our own islands; except (as Mr. Ray suspects, the Sula, described in Clusius' Exotics, which breeds in the Ferroe Isles,) be the same bird. In America there are two species of birds of this genus, that bear a great resemblance to it in their general form and their manner of preying. Mr. Catesby has given the figure of the head of one, which he calls the Greater Booby; his description suits that of the young Gannet; but the angle on the lower mandible made us formerly suspect that it was not the same bird; but from some late information we have been favoured with, we find it is common to both countries, and during summer frequents North America. Like the Penguin, it informs navigators of the approach of soundings, who on sight of it drop the plummet. Linnæus classes our bird with the Pelecan."

MEMOIR OF A CELEBRATED SETTER DOG.

This Dog was purchased in June, 1822, when about six months old; at which age, he showed the predominant features which distinguished this description of Dogs from all others in such a remarkable degree, that from the first moment I saw him I did not rest satisfied until he became my property; nor was I disappointed.

In detailing some instances of his remarkable sagacity, I will pass over the more common qualities of bottom, a good nose, fine ranging, standing and backing, for these he possessed equal to any of his contemporaries; but those which I will mention may be considered as *extra*, and are not witnessed by many sportsmen.

In the first place, in windy weather when the birds were restless and would run before him, he would trail them until he could get the sportsman as nigh as the birds would suffer him to approach, and if he still found the birds moving off, would instantly, and with great rapidity make a half circle to the leeward, and coming up immediately in front, would bring them to a sudden stop. By this finesse he would enable the sportsman to get to a desirable situation, when nothing else would avail; for birds when running from their feeding ground to cover in windy weather, are almost certain to rise at too great a distance, if the noise which occurs in their wake seems to approach them very close; on the contrary, a sudden transit from that to almost any other situation will have the effect of stopping them; this, the sagacity of this Dog found out, and he would invariably practice it whenever the occasion offered, yet I never knew him but once to flush a covey, and this occurred in miserable cover. It certainly was interesting to see the manner and spirit with which he controlled the actions of the birds in order to contribute to the pleasures of his master.

I have several times known "Thorn"* to point a live bird with a dead one in his mouth. On one occasion while hunting in company with two other gentlemen on the extensive farm belonging to S. H., in Evesham, N. J., I had an excellent opportunity to witness this remarkable trait in his character. I had just shot a partridge in a small copse, and while reloading my empty barrel, missed my favourite Dog, but on looking behind me I discovered him at a point with the bird in his mouth that I had just shot; friend S. H., who before that day had never seen Dogs point game, was so enamoured with it, that he followed us nearly the whole day for no other purpose than to see the Dogs hunt; and thinking perhaps that he never would have another opportunity of seeing a Dog situated as mine

* This was his name.

was at that moment, I beckoned him to me, and after showing him the Dog, and explaining to him the cause of his acting thus, I flushed and shot the bird; thus giving the most palpable evidence of the fact that was possible to give; and as the like circumstance very rarely occurs, (and I know of but two instances on record, the one I believe is in Daniel's Rural Sports, and in the American Turf Register,) I should like to know how often sportsmen have witnessed the same action in Dogs of their own or those belonging to their friends.

This Dog was so perfectly acquainted with his duty, that he has been known to evince the greatest displeasure when another Dog in company committed an error.—An instance of this kind I will mention as related to me by some gentlemen, who had him with them on an excursion in the neighbourhood of Holmesburg near this city. They were hunting him in company with another Dog, which was very headstrong and disobedient, and although he would find and stand game very well, would not back another dog that had found it, nor suffer another Dog to back him, but would in both cases invariably flush the game, having on this day exercised this disposition in several instances to the great displeasure of the company. At length he pointed a covey in some bushes, and my Dog being near him at the time, backed him without moving from the spot; but the former Dog hearing the noise of the sportsmen approaching from behind, caused him to turn his head, when he no sooner discovered that he was backed by another Dog, than he sprang upon the covey and flushed them. Thorn, whose patience I suppose was exhausted, as well as the sportsmen at such conduct, immediately seized the offender by the throat, with that degree of ferocity, as not only to punish him severely, but to leave those impressions upon him, which he remembered the rest of the day.

He was a favourite Dog with three very respectable and experienced sportsmen of this city, Mr. H., Mr. C. and Mr. L., and perhaps no three gentlemen could be found of better judgment and greater experience in sporting concerns; and as, Mr. Editor, I lend my dog, and gun also, (especially to experienced sportsmen, who I am convinced will always take care of that which is committed to their trust,) it was the prime consideration of these gentlemen (as they always hunted together,) when preparing for a gunning excursion, to secure the services of this Dog, for he was their Alpha, and was always rated by them as a dog of the highest order, and indeed as possessing some properties, which their experience had never before witnessed. These gentlemen informed me that on one occasion after partridges, he suffered three shots to be fired over him, before he broke from his point, and upon another occasion while they were on an excursion after woodcock in the lower part of New Jersey, one of the party fired at, and supposed wounded a bird, but as the majority were against his opinion, he made no further research, but gave it up. The day being warm, and they wishing to change their ground, thought it advisable first to go to a tavern, about one-fourth of a mile distant from them for some refreshment, where they remained about half an hour. On preparing to renew their hunt, they called their dogs, but Thorn was in default; this excited much uneasiness amongst them. They then commenced hallooing and whistling, and using such other means to find their absent friend as the emergency of the case required; they were however soon relieved from all unpleasant feelings on the subject, for they discovered his approach through a cornfield, with a woodcock in his mouth, supposed to be the identical bird fired at last and wounded by one of the party.—It appears, as stated by a boy who watched the Dog, that after following the party some distance towards the house, he suddenly turned about and made directly for the thicket into which the bird had flown, and where no doubt he had seen it settle, and that finding the bird, pointed it, and remained so until he heard them calling at the house, when he sprang upon the bird and caught it.

Another interesting case occurred with Mr. H. a young gentleman of this city, who has related it several times, with a great degree of pleasure. Himself and his father were desirous of spending a short time in the country, and although not being sportsmen, were nevertheless desirous of taking with them guns and a Dog, in order to break in upon the monotony that a stay in the country presents to a citizen; they accordingly procured my Dog, and the next morning after having reached their new abode, they determined to spend in hunting; accordingly all things prepared they set out on their excursion, but the day waxing warm, the father became tired, and returned. The son, not yielding to fatigue so soon, and unwilling to return without some trophy of his perseverance, continued his pursuit for several hours. During this period, after flushing a covey of partridges, the Dog found and pointed several scattered birds, at which our young sportsman fired without success. The Dog discovering the kind of master he had to work for, became utterly regardless of the game, and would run over every bird instead of pointing them. Discouraged at his ill success, our young friend concluded to return home with but one bird, (which the Dog pointed and caught in the act of rising,) disposed to impute the blame to the Dog as the cause of his disappointment; but on relating the circumstance to his father became soon convinced where the error was, by an anecdote of the same nature being related to him, of two celebrated

pointer Dogs, the property of a nobleman in England, having left the field and returned home, because the gentleman who was hunting with them, being a stranger, and having missed the three first shots at birds which they had found and pointed for him. And it is here worthy to remark, that good dogs will uniformly act in concert with good shots, and become indifferent in performing their duty, in proportion to the inferiority of the master they are serving.

There was, perhaps, no Dog superior to this for finding and bringing shot game; he could be directed any course you wished by simply throwing a stone, and he seldom returned without the object he was sent for, even in the most difficult, and, to the sportsman, inaccessible places; such as swamps, marshes, briers, and swimming broad streams, &c., and I knew him once to swim into a mill pond 150 yards and bring to land a duck, from the midst of an innumerable quantity of stumps and dead tree tops.

This remarkable Dog was taken from my yard about two years since by an acquaintance, who was going after woodcock, whilst I was absent from the city, and was lost by him the same evening, since which period he has not been heard of—it is supposed he fell a sacrifice to our dog laws, then in force, or was stolen—the former, however, is the most probable. D.

HUNTING BUFFALO.

One morning a whole train of elephants, taking up two lines, entered one of the heaviest jungles in the country. Hospitius, Cambius, and Shawzada, mounting their steadiest horses, posted themselves on the outskirts, prepared to attack those Buffaloes which might take to the plains; but the spear was resigned for the stout double-barrelled gun, charged with *tin* balls: the remaining sportsmen, placing more dependence on the lofty back of the elephant than on the velocity and activity of the horse in the approaching chase, sate secure in their *howdars*,* encircled with guns, and, leading the line, entered the almost impervious high grass. At a given signal the Mahouts, or elephant-drivers, urged those sagacious animals through the opposing thickets: erecting their trunks almost perpendicularly, for the purpose, probably, of guarding this most sensitive member from the sudden attack of some concealed ferocious animal—the tiger, or the more formidable rhinoceros—they urged their way with slow resistless footsteps through the strong jungles, every now and then raising a shrill trumpeting, which became louder as difficulties occurred, and in which they strove to outvie each other. Beneath the feet of a hundred elephants the stoutest branches crackled; the snapping sounds reverberated through the hollow woods; and their wild screams arose above the tumultuous din of horns and the deep music of the human voice; while every now and then the animals would playfully strike the high waving tops of the lofty jungle with their pliant trunks, and besprinkle the faces of their riders with the early morning dew, brushed off from the gracefully bent bearded heads of the silky grass. The constant dropping shots which were heard at intervals denoted to the skirting and adventurous horsemen the progress of the party through the deeper recesses of the forest, till at length one rending shout, and the quick and incessant firing, announced that they had come upon a herd of wild Buffaloes.

After the lapse of a few minutes the whole herd rushed forth in one black, condensed, formidable body, some bleeding, others, though mortally wounded, yet struggling on in their last agonies till the death-pang overtook them, and, falling slowly on their knees, they sank majestically to rise no more. One, with blood-shot eyes and wrinkled front, stood alone on an elevated knoll, with lowering head and spreading horns, pawing up furiously the verdant turf: he was one, who, long the favourite of the fickle female train, had been lately ejected from the herd by caprice, or some stronger rival: his spirit brooded over his wrongs, and he stood reckless, prepared desperately to charge any moving thing which should come within his reach: he had long been the terror of the surrounding country.

The cheering voice of Cambius urged the attack, and, circling round in rapid career, he discharged a shot, which only raised the skin and farther excited the fury of the Buffalo, who rushed towards the bold horseman with senseless rage. The white foam flew over his head, and fell like snow-flakes upon his black skin; but the speed of Feridoon upon this occasion, and the prompt assistance of Hospitius and Shawzada, saved the life of Cambius: for while the Buffalo, intent upon the destruction of the latter, continued his desperate course, they rode up and wounded him severely; and, at the same time, one of the stoutest elephants came up with Idem and Dubiosus to the support of their friends. The Buffalo prepared for the encounter with determined energy: he lashed his tail, stamped up the ground, and the plain resounded with his deep bellowings, which seemed to invite the combat. The shrill trumpeting of the elephant answered the summons; while crowds of affrighted ryots, or cultivators, perched on adjacent trees, watched with alarm the progress of the

* *Howdar*, a covered wooden tower, placed on the elephant's back.

contest. When the elephant approached within about fifty yards, the Buffalo rushed on with a force and resolution which no language can adequately describe. Perforated with weighty balls, besmeared with blood, fire in his eye, and ebbing strength in his charge, he came on with his head down between his knees, struggling onward, and rushed upon his colossal foe. The shock staggered him; and, reeling backwards some paces, he stooped, stumbled forward, and fell dead at the feet of the elephant; who, scorning to insult a fallen enemy, stood unmoved over the prostrate carcase.—*Lond. Sport. Mag.*

TIGER HUNTING IN THE EAST INDIES.

On Saturday last, the Potail of Mallegaum sent in to say a Tiger had been marked down, and three Officers, McMurdo of the H. A., Craigie, of the 28th, and Brett, of the 31st, went out to kill it. On arriving at the ground they learned there were three Tigers, and their lair was pointed out by the villagers. After beating for some time, the Tigers were on foot and Brett mortally wounded one of them, which, after a short struggle, died in a bush. They followed the others, and McMurdo got view of one of them, about sixty yards from him, which he fired at, but missed; the villagers from among the hills marked the brute into a clump of bushes, on the edges of a nullah; the circumference of these bushes was not more than sixty or seventy feet, and though they beat all round them, and thrust in sticks and the muzzles of their guns, the animal never moved.

They then proposed going on further to look for it, and poor McM. said, "Stop a moment till I put another ball in my gun." They were all three close together, and about a yard from the bush. Craigie and Brett stepped aside to look at the Tiger's foot-prints, when suddenly they heard a tremendous roar, and looked round, saw the brute with McM. in his grasp; he fell instantly. Craigie fired both barrels into the animal, which rolled over with McM. into the nullah. Brett ran up, missed with one barrel and hit him on the head with the other. So instantaneous was the spring, and so close was McMurdo, that he had no time to use his gun; in fact, it was all over in a few seconds. Craigie and Brett had now to re-load. They saw the poor fellow in the nullah, (which was very shallow,) making all the resistance that man could make; his left arm thrust down the brute's throat, his right having been mangled in vain attempts to extricate himself. Whilst his companions were re-loading, a bold fellow, a native, ran in, picked up McMurdo's gun, and fired the barrel that was primed into the animal, which then rolled over a few yards from the poor fellow; presently they heard him cry out, "Oh God! oh God! Craigie, Craigie, he is coming at me again! Craigie and the villagers then attacked and despatched the beast with stones: the whole sad business happened in much less time than the recital can give you an idea of. Poor McM.'s state was most dreadful; his left thigh crushed to atoms, both arms dreadfully mangled and lacerated, two claw-marks on his face, and his side much bruised. He was a man of the most immoveable nerve, and his courage was beyond every thing daring. He had killed two Tigers before, on foot; one of them by a shot which laid the animal at his feet almost touching him.

When the first Tiger on Saturday was wounded, it was struggling in a bush, and McM. went up and finished it with as much coolness, as if it had been a wounded hare. When it was pulled out, he gave a jump in the air, saying, "By Jove! what capital sport we shall have if we can get them all three." He was constantly out after wild animals, and meeting with adventures: was a capital and fearless horseman, and invariably a foremost rider in our hog hunts. He so entirely retained his presence of mind in his struggle with the Tiger, that he knew every shot that was fired, and when he spoke of the stones hitting it, the poor fellow smiled. He told Craigie to go and examine the beast, and see if he had not hit him, when he took the shot at a distance. He said that for a month past he had an impression that he should meet with some accident, "but I had no idea it would be so bad as this, for I suppose I must lose my leg." His firmness never forsook him for a moment; after about two hours he complained of thirst, and spasms in the stomach, and was evidently sinking fast. He asked Craigie to loosen the silk handkerchief which had been applied as a tourniquet to stop the bleeding in the thigh; this, however, could not be done; he then became insensible, breathed hard for some time, then more and more faintly, and expired, without a groan or struggle, before medical aid could reach him. You may imagine how so fatal an adventure has affected all, though from his extraordinary daring, he was a man unlikely to come to a premature end. There was a strength of nerve in him as if nature had made him without the sense of fear: for, however critical his situation, he seemed unconscious of danger.

THE CORK OAK-TREE.

The Cork Oak (*Quercus suber*) is not so large a tree as the common oak. There are several varieties: a broad

leaved and a narrow leaved, which are evergreens; besides other varieties which shed their leaves. The broad leaved evergreen is, however, the most common, and it is the one from which the cork of commerce is chiefly obtained. It is mentioned by Theophrastus, Pliny, and some other ancient naturalists, as being well known in the days of the Greeks and Romans—the latter of whom used it for a variety of purposes, and among the rest for the stopping of bottles. They used it for floats to their nets and fishing tackle; for buoys to their anchors; and when Camillus was sent to the Capitol, through the Tiber, during the siege by the Gauls, he had a life-preserver of cork under his dress.

The Cork Oak is indigenous, or at least abundant, in Portugal, Spain, part of the south of France, and Italy; on the opposite coast of the Mediterranean, and the Levant. Spain and Portugal supply the greater portion of the cork which is consumed in Europe. The cork is the bark which the tree pushes outwards, as is common to all trees; but here the outer bark is of larger quantity, and is more speedily renewed. When removed, there is a *liber*, or inner bark, below it, and from this the cork is re-produced in the course of a few years—while the tree is said to live longer, and grow more vigorously, than if the cork were not removed. The first time that the cork is taken off, is when the tree is about fifteen years old. That crop is thin, hard, full of fissures, and consequently of little value; and the second, which is removed about ten years after, is also of an inferior quality. After this, the operation is repeated once in eight or ten years, the produce being greater in quantity, and superior in quality, each successive time. According to Duhamel, a cork tree thus barked will live a hundred and fifty years. The months of July and August are those which are chosen for removing the cork. The bark is cleft longitudinally, at certain intervals, down to the crown of the root, with an axe, of which the handle terminates in a wedge; and a circular incision is then made from each extremity of the longitudinal cuts. The bark is then beaten, to detatch it from the *liber;* and it is lifted up by introducing the wedged handle, taking care to leave sufficient of the inner laminæ upon the wood, without which precaution the tree would certainly die. The bark being thus removed, it is divided into convenient lengths; and it is then flattened, and slightly charred, to contract the pores. This substance is the rough cork of commerce; and it is thus fit to be cut into floats, stoppers, shoe-soles and other articles of domestic use, by the manufacturer. The cork of the best quality is firm, elastic, and of a slightly red colour. Cork burned in vessels of a particular construction gives the substance called *Spanish black.*

[*Lib. Ent. Know.*

ALMOND-TREE.

The *Almond-Tree* has a considerable resemblance to the peach in the form of its leaves, and of its blossoms, only the latter are more variable in colour. It is probable that the almond is a native of the western parts of Asia. The almond is mentioned in the Scriptures as amongst the best fruits of the land of Canaan. It is very plentiful in China, in most of the eastern countries, and also in Barbary. In that country it is the most early bearer of all the fruit trees. It flowers in January, and gives its fruit in April. It does not appear that the Almond-tree, (which is now abundantly cultivated for its fruit in Italy, Spain, and the south of France,) was so early introduced into the first of these countries as the peach, or that its native region was so well known, "Greek nuts" being the name given to almonds at Rome in the time of Cato.

The fruit of the almond is not so attractive as that of the peach; because, instead of presenting the same delicious pulp as that, the pericarp of the almond shrivels as the fruit ripens; and when the ripening is completed, has become a horny kind of husk, which opens of its own accord. The kernel of some varieties of the almond is not defended by so tough a shell as that of the peach and nectarine; for it is often so tender that the nuts break when shaken together.

In the south of Europe, where the almond is cultivated with as much care as the peach is in this country, its varieties are carefully distinguished. The bitter and the sweet are permanently distinct varieties; and after this leading character is observed, the variety is further distinguished by the form and degree of hardness of the shell. For instance, the French have, "amandier à coque dure"—"amandier à coque demi-dure"—"amandier à coque tendre."

In England, Almond-trees are chiefly cultivated for the beauty of their early flowers; and for this reason, the common kind, and the double-flowering dwarfs, are preferred. There is something very charming in the peculiarity which belongs to this tree, of blossoming on the bare branches:

> "The hope, in dreams, of a happier hour,
> That alights on misery's brow,
> Springs out of the silvery almond-flower,
> That blooms on a leafless bough."

One of the most beautiful tales of the Greek mythology, (that of the Loves of Phillis and Demophoon,) is founded on this property of the Almond-tree.

Almond-trees ripen their fruit in England, though the produce is very inferior to that which is imported. The

flowers of the productive almond, both the sweet and the bitter, are much less showy than those of the unproductive. Like most of the other nut bearing trees, the almond yields an oil. Between the expressed oil of bitter, and that of sweet almonds, there is little difference; but the bitter almond contains an essential oil, while the sweet almond has none. Owing to the prussic acid which it contains, this essential oil is found, by experiment, to be exceedingly poisonous; and therefore the use of bitter almonds should be carefully avoided in every instance where there is a chance that the essential oil may be separated in the stomach. So very violent is the poison of this oil, that instances are recorded of persons dying in consequence of drinking even a very small portion of spirits flavoured by it; and, in its concentrated state, it is probably not exceeded, in its hurtful effects, even by the essential oil of tobacco itself, or by any of the narcotic vegetable poisons.

According to Haller, (*Hist. Plant.*,) bitter almonds are a poison to birds and quadrupeds.

Almond oil, (the expressed oil,) is principally obtained from the almonds of Valentia and Barbary; the Syrian almonds, usually called Jordan almonds, being preferred for the table.

The *Large Fruited Almond*, (*var. macrocarpa*,) is one of the most beautiful varieties of the almond. The flowers are twice as large as those of the common sort, and remain longer in perfection: the fruit also is larger.—*Ibid.*

DANGEROUS PLANT AMONG WATER-CRESSES.

The procumbent water parsnip, *Sium nodiflorum*, is a dangerous plant of the umbelliferous class, which grows mixed with water-cresses in springs and streams. When not in flower, it so much resembles the latter, that it is with difficulty distinguished except by a botanist. Water-cresses are of a deeper green, and sometimes spotted with brown, and the extremities of the leaves are more round, and especially the last leaves, which are in pairs, larger than the others, and undulated at their edges. The water parsnip, on the contrary, is of a uniform green; the ends of its leaves are longer and narrower, conical at the extremities, and toothed at the edges. The best method of knowing them well is to examine them in July, when their flowers are expanded, and when they may be thoroughly distinguished from each other.

[*Quarterly Journal of Science.*

From the Connecticut Mirror.

The following lines are full of spirit. The hunters rousing to the chase, the scene of plaintive indolence which would keep them back, the magic morning, and the inspiriting emotions which it inspires, are all beautifully depicted.

THE HUNTER'S MORNING SONG.

Away, away, to the mountains blue,
Where the waving trees the bright clouds woo,
We will fly on the wings of the viewless wind,
And leave the dull, cold earth behind;
We will wander as wild, as gay and free,
As a rushing wave on a stormy sea.

Aha, Aha, that wailing cry,
They would charm us back with Love's lullaby,
For little they know how the hunter's horn,
Will thrill through the heart in the merry morn—
Let them shake their dull limbs, and palsied head,
We will leave them to their sluggard's bed.

Away, away, how the sunbeams glance,
From the burnished steel, and the glittering lance,
How the morning mists are fading away,
From the burning beams of the God of Day;
They linger yet, o'er the mountains curled,
As if grieving to quit so fair a world.

Away, away, there is joy on Earth,
And the rosy morning laughs for mirth;
There is joy in the breath of the balmy air,
As if Heaven had showered its odours there—
There is joy on the breast of the dancing wave,
And on the green banks that its waters lave.

No thought of the future shall darken the brow,
That is beaming with hope, and happiness now,
For we leave all grief, and worldly cares,
To the gloomy mantle that dotage wears;
We will drink the light of the new born day,
Till its spirit fills us, away, away.

J. L. R.

METHOD OF PREVENTING IRON AND STEEL FROM RUSTING.

This easy method consists in heating the steel or iron until it burns the hand; then rub it with virgin or pure white wax. Warm it a second time so as to melt and divide off the wax, and rub it with a piece of cloth or leather until it shines well. This single operation, by filling all the pores of the metal, defends it completely from rust, even though it should be exposed to moisture.

[*Jour. de Connois. Usuelles, Jan.* 1830.

From the Library of Useful Knowledge.

THE VICES AND DISAGREEABLE OR DANGEROUS HABITS OF THE HORSE.

THE Horse has many excellent qualities, but he has likewise defects, and these occasionally amounting to vices. Some of them may be attributed to natural temper; for the human being scarcely discovers more peculiarities of habit and disposition, than does the Horse. The majority of them, however, as perhaps in the human being, are consequences of a faulty education. Their early instructor has been both ignorant and brutal, and they have become obstinate and vicious.

RESTIFNESS.

At the head of the vices of the Horse we place RESTIFNESS, the most annoying, and the most dangerous of all. It is the produce of bad temper and worse education; and, like all other habits founded on nature and stamped by education, it is inveterate. Whether it appears in the form of kicking, or rearing, or plunging, or bolting, or in any way that threatens danger to the rider or the Horse, it rarely admits of cure. A determined rider may, to a certain degree, subjugate the animal; or the Horse may have his favourites, or form his attachments, and with some particular person he may be comparatively or perfectly manageable; but others cannot long depend upon him, and even his master is not always sure of him. We will speak of the most likely means of cure, or escaping from danger, as it regards the principal forms under which restifness displays itself; but we must premise as a rule that admits of very few exceptions, that he neither displays his wisdom, nor consults his safety, who attempts to conquer a restiff Horse.

An excellent veterinary surgeon, and a man of great experience in Horses, Mr. Castley, truly says, in "The Veterinarian:" "From whatever cause the vicious habits of Horses may originate, whether from some mismanagement, or from natural badness of temper, or from what is called in Yorkshire a *mistetch*, whenever these animals acquire one of them, and it becomes in some degree confirmed, they very seldom, if ever, altogether forget it. In reference to driving, it is so true, that it may be taken as a kind of aphorism, that if a Horse kicks once in harness, no matter from what cause, he will be liable to kick ever afterwards. A good coachman may drive him, it is true—and may make him go, but he cannot make him forget his vice; and so it is in riding. You may conquer a restiff

Horse; you may make him ride quiet for months, nay, almost for years together, but I affirm, that under other circumstances and at some future opportunity, he will be sure to return to his old tricks again."

Mr. Castley gives two singular and conclusive instances of the truth of this doctrine. "When a very young man," says he, "I remember purchasing a Horse at a fair in the north of England, that was offered very cheap on account of his being unmanageable. It was said that nobody could ride him. We found that the animal objected to have any thing placed upon his back, and that, when made to move forward with nothing more than a saddle on, he instantly threw himself down on his side with great violence, and would then endeavour to roll upon his back.

"There was at that time in Yorkshire, a famous colt-breaker, known by the name of Jumper, who was almost as celebrated in that country for taming vicious Horses into submission, as the famed Whisperer was in Ireland. We put this animal into Jumper's hands, who took him away, and in about ten days brought him home again, certainly not looking worse in condition, but perfectly subdued and almost as obedient as a dog: for he would lie down at this man's bidding, and only rise again at his command, and carry double or any thing. I took to riding him myself, and may say, that I was never better carried for six or eight months, during which time he never showed the least vice whatever. I then sold him to a Lincolnshire farmer, who said that he would give him a summer's run at grass, and show him a very fine Horse at the great Horncastle fair.

"Happening to meet this gentleman the following year, I naturally enough inquired after my old friend. 'Oh,' said he, 'that was a bad business—the Horse turned out a sad rebel. The first time we attemped to mount him, after getting him up from grass, he in an instant threw the man down with the greatest violence, pitching him several yards over his head; and after that he threw every one that attempted to get on his back. If he could not throw his rider, *he would throw himself down*. We could do nothing with him, and I was obliged at last to sell him to go in a stage-coach.'"

In the next story, Jumper's counterpart and superior, the Irish Whisperer, is brought on the stage, and, although he performs wonders, *he* cannot radically cure a restiff Horse. "At the Spring Meeting of 1804, Mr. Whalley's King Pippin was brought on the Curragh of Kildare to run. He was a Horse of the most extraordinary savage and vicious disposition. His particular propensity was that of *flying at and worrying* any person who came within his reach, and if he had an opportunity, he would get his head round, seize his rider by the leg with his teeth,

and drag him down from his back. For this reason he was always ridden in what is called *a sword;* which is nothing more than a strong flat stick, having one end attached to the cheek of the bridle, and the other to the girth of the saddle, a contrivance to prevent a horse of this kind from getting at his rider.

"King Pippin had long been difficult to manage and dangerous to go near, but on the occasion in question he could not be got out to run at all. *Nobody could put the bridle upon his head.* It being Easter Monday, and consequently a great holyday, there was a large concourse of people assembled at the Curragh, consisting principally of the neighbouring peasantry; and one countryman, more fearless than the rest of the lookers-on, forgetting, or perhaps never dreaming that the better part of courage is discretion, volunteered his services to bridle the Horse. No sooner had he committed himself in this operation, than King Pippin seized him somewhere about the shoulders or chest, and, says Mr. Watts, (Mr. Castley's informant,) 'I know of nothing I can compare it to, so much as a dog shaking a rat.' Fortunately for the poor fellow, his body was very thickly covered with clothes, for on such occasions an Irishman of this class is fond of displaying his wardrobe, and if *he has three coats at all in the world*, he is sure to put them all on.

"This circumstance in all probability saved the individual who had so gallantly volunteered the forlorn hope. His person was so deeply enveloped in extra-teguments, that the Horse never got fairly hold of his skin, and I understand that he escaped with but little injury, beside the sadly rent and totally ruined state of his holyday toggery.

"The Whisperer was sent for, who, having arrived, was shut up with the Horse all night, and in the morning he exhibited this hitherto ferocious animal, following him about the course like a dog—lying down at his command—suffering his mouth to be opened, and any person's hand to be introduced into it—in short, as quiet almost as a sheep.

"He came out the same meeting, and won a race, and his docility continued satisfactory for a long time; *but at the end of about three years his vice returned*, and then he is said to have *killed a man*, for which he was destroyed."

It may not be uninteresting in this connexion, to give some account of this tamer of quadruped vice. However strange and magical his power may seem to be, there is no doubt of the truth of the account that is given of him. The Rev. Mr. Townsend, in his Statistical Survey of Cork, first introduced him to the notice of the public generally, although his fame had long spread over that part of Ireland. We, however, give the following extract from Croker's Fairy Legends and Traditions of Ireland, Part II. p. 200, for the fact seems the work of some elfin sprite, rather than of a rude and ignorant horse-breaker.

"He was an awkward, ignorant rustic of the lowest class, of the name of Sullivan, but better known by the appellation of the Whisperer; his occupation was horse-breaking. The nickname he acquired from the vulgar notion of his being able to communicate to the animal what he wished by means of a whisper, and the singularity of his method seemed in some degree to justify the attribute. In his own neighbourhood, the notoriety of the fact made it seem less remarkable, but I doubt if any instance of similar subjugating talent is to be found on record. As far as the sphere of his control extended, the boast of *veni vidi vici*, was more justly claimed by Sullivan than by Cæsar himself.

"How his art was acquired, and in what it consisted, is likely to be for ever unknown, as he has lately, (about 1810,) left the world without divulging it. His son, who follows the same trade, possesses but a small portion of the art, having either never learned the true secret, or being incapable of putting it into practice. The wonder of his skill consisted in the celerity of the operation, which was performed in privacy without any apparent means of coercion. Every description of Horse, or even mule, whether previously broken or unhandled, whatever their peculiar habits or vices might have been, submitted without show of resistance to the magical influence of his art, and in the short space of half an hour became gentle and tractable. This effect, though instantaneously produced, was generally durable. Though more submissive to him than to others, they seemed to have acquired a docility unknown before.

"When sent for to tame a vicious beast, for which he was either paid according to the distance, or generally two or three guineas, he directed the stable, in which he and the object of the experiment were, to be shut, with orders not to open the door until a signal was given. After a *tête-à-tête* of about half an hour, during which little or no bustle was heard, the signal was made, and, upon opening the door, the Horse appeared lying down, and the man by his side, playing with him like a child with a puppy dog. From that time he was found perfectly willing to submit to any discipline—however repugnant to his nature before. 'I once,' continues Mr. Townsend, 'saw his skill tried on a Horse, which could never before be brought to stand for a smith to shoe him. The day after Sullivan's half-hour's lecture, I went, not without some incredulity, to the smith's shop, with many other curious spectators, where we were eye-witnesses of the complete success of

his art. This, too, had been a troop Horse, and it was supposed, not without reason, that after regimental discipline had failed, no other would be found availing. I observed that the animal appeared terrified whenever Sullivan either spoke or looked at him; how that extraordinary ascendancy could have been obtained, is difficult to conjecture.

"In common cases this mysterious preparation was unnecessary. He seemed to possess an instinctive power of inspiring awe, the result, perhaps, of natural intrepidity, in which, I believe, a great part of his art consisted; though the circumstance of the *tête-à-tête* shows that, on particular occasions, something more must have been added to it. A faculty like this would in some hands have made a fortune, and I understand that great offers were made to him, for the exercise of his art abroad. But hunting was his passion. He lived at home in the style most agreeable to his disposition, and nothing could induce him to quit Duhallow and the fox hounds."

Mr. Castley witnessed the total failure of the younger Sullivan. He says, "We have in the regiment a remarkably nice Horse, called Lancer, that has always been very difficult to shoe, but seven or eight years ago, when we first got him, he was downright vicious in that respect. When the regiment was stationed at Cork, the farrier-major sought out the present Sullivan, the son of the celebrated Whisperer, and brought him up to the barracks in order to try his hand upon Lancer, and make him more peaceable to shoe; but I must say this person did not appear to possess any particular controlling power over the animal, more than any other man. Lancer seemed to pay no attention whatever to his charm, and, at last, fairly beat him out of the forge. Time, however, and a long perseverance in kind and gentle treatment, have effected what force could not. The Horse is now pretty reasonable to shoe."

BACKING OR GIBBING.

One of the first species of restifness, taking them in alphabetical order, is BACKING OR GIBBING. These are so closely allied that we hardly know how to separate them. Some Horses have the habit of backing at first starting, and that more from playing than desire of mischief. A moderate application of the whip will usually be effectual. Others, even at starting, exhibit considerable obstinacy and viciousness. This is frequently the effect of bad breaking. Either the shoulder of the Horse had been wrung when he was first put to the collar, or he had been foolishly accustomed to start in the break *up-hill*, and therefore all his work coming upon him at once, when it being much more difficult to draw the break up-hill, than to back and let it run down-hill, he gradually acquired this dangerous habit.

A hasty and passionate breaker will often make a really good-tempered young Horse an inveterate gibber. Every young Horse is at first shy of the collar. If he be too quickly forced to it, he will possibly take a dislike to it, that will occasionally show itself in the form of gibbing as long as he lives. The judicious horse-breaker will resort to no severity, even if the colt should go out several times without touching collar. The example of his companion will ultimately induce him to take to it voluntarily and effectually.

A large and heavy stone should be put behind the wheel before starting, when the Horse, finding it more difficult to back than to go forward, will gradually forget this unpleasant trick. It will likewise be of advantage, as often as it can be managed, so to start that the Horse shall have to back up-hill. The difficulty of accomplishing this will soon make him readily go forward at once. A little coaxing, or leading, or moderate flagellation, will assist in accomplishing the cure.

When, however, a Horse, thinking that he has had enough of work, or has been improperly checked or corrected, or beginning to feel the painful pressure of the collar, swerves, and gibs, and backs, it is a more serious matter. Persuasion should here first be tried; and, afterwards, reasonable coercion, but no cruelty: for the brutality which is often exercised in attempting to compel a gibbing Horse to throw himself habitually into the collar, never yet accomplished the purpose. The Horse may, perhaps, be whipped into motion, but if he has once begun to gib, he will have recourse to it again whenever any circumstance displeases or annoys him; and the habit will be rapidly, and so completely formed, that he will become insensible to all severity.

It is useless and most dangerous to contend with a Horse determined to back, unless there is plenty of room, and, by tight reining, the driver can make him back in the precise direction he wishes, and especially up-hill. Such a Horse should be immediately sold, or turned over to some other work. In a stage-coach as a wheeler, and particularly as a near-wheeler; or, in the middle of a team at agricultural work, he may be serviceable. It will be useless for him to attempt to gib there, for he will be dragged along by his companions whether he will or no; and, finding the inutility of resistance, he will soon be induced to work as well as any Horse in the team. This reformation will last while he is thus employed, but, like restifness generally, it will be delusive when the Horse returns to his former occupation. The disposition to annoy will very

soon follow the power to do it. Some instances of complete reformation have occurred, but they have been rare.

When a Horse, not often accustomed to gib, betrays a reluctance to work, or a determination not to work, common sense and humanity will demand that some consideration should be taken, before measures of severity be resorted to. The Horse may be taxed beyond his power. He soon discovers whether this is the case, and by refusing to proceed, tells his driver that it is so; and the utmost cruelty will not induce many Horses to make the slightest effort, when they are conscious that their strength is inadequate to the task. Sometimes the withers are wrung, and the shoulders sadly galled; and the pain, which is intense on level ground and with fair draught, becomes insupportable when he tugs up a steep acclivity. These things should be examined into, and, if possible, rectified; for, under such circumstances, cruelty might produce obstinacy and vice, but not willing obedience.

Those who are accustomed to Horses know what seemingly trivial circumstances occasionally produce this vice. A Horse, whose shoulders are raw, or that have frequently been so, will not start with a cold collar. When the collar has acquired the warmth of the parts on which it presses, the animal will go without reluctance. Some determined gibbers have been reformed by constantly wearing a false collar, or strip of cloth round the shoulders, so that the coldness of the usual collar should never be felt; and others have been cured of gibbing by keeping the collar on night and day, although the animal is not able to lie down so completely at full length, which the tired Horse is always glad to do. When a Horse gibs, not at starting, but while doing his work, it has sometimes been useful to line the collars with cloth instead of leather; the perspiration is readily absorbed, the substance which presses on the shoulders is softer, and it may be far more accurately eased off at a tender place.

BITING.

This is either the consequence of natural ferocity, or a habit acquired from the foolish and teasing play of grooms and stable boys. When a Horse is tickled and pinched by thoughtless and mischievous youths, he will first pretend to bite his tormentors; by degrees he will proceed farther, and actually bite them, and, very soon after that, he will be the first to challenge to the combat, and without provocation seize some opportunity to gripe the incautious groom; and then, as the love of mischief is a propensity too easily acquired, this war, half playful, and half in earnest, will become habitual to him, and will degenerate into absolute viciousness. Nothing can here be done in the way of cure; kindness would aggravate the evil, and no degree of severity will correct it. Prevention, however, is in the power of every proprietor of Horses. While he insists on gentle and humane treatment of his cattle, he should systematically forbid this horse-play. It is that which can never be considered as operating as a reward, and thereby rendering the Horse tractable; nor does it increase the affection of the animal for his groom, because he is annoyed and irritated by being thus incessantly teased.

GETTING THE CHEEK OF THE BIT INTO THE MOUTH.

Some Horses that are disposed to be mischievous try to do this, and are very expert at it. They soon find what advantage it gives them over their driver, who, by this manœuvre, loses all command. Harsh treatment is here completely out of the question. All that can be done is, by some mechanical contrivance, to render the thing difficult or impossible, and this may be managed by fastening a round piece of leather on the inside of the cheek of the bit.

KICKING.

This, as *a vice*, is another consequence of the culpable habit of grooms and stable boys of teasing the Horse. That which is at first an indication of annoyance at the pinching and tickling of the groom, and without any design to injure, gradually becomes the expression of anger, and the effort at mischief. There is no cure for this vice; and he cannot be justified who keeps such a kicking Horse in his stable.

Some Horses acquire a habit of kicking at the stall or the bail, and particularly at night, from mere irritability and fidgettiness. The neighbouring Horses are disturbed, and the kicker gets swelled hocks, or some more serious injury. This is also a habit very difficult to correct if suffered to become established. Mares are far more subject to it than Horses.

Before the habit is inveterately established, a thorn bush or a piece of furze fastened against the partitition or post will sometimes effect a cure. When the Horse finds that he is pretty severely pricked he will not long continue to punish himself. In confirmed cases it may be necessary to have recourse to the log, but the legs are often not a little bruised by it. A rather long and heavy piece of wood attached to a chain is buckled above the hock, so as to reach about half way down the leg. When the Horse attempts to kick violently, his leg will receive a severe blow from this, and the repetition of the blow will soon teach him to be quiet.

(*To be continued.*)

POLAR BEAR.

POLAR BEAR.

URSUS MARITIMUS.

[Plate XIX.]

Ursus Maritimus, Linn. *Ursus Albus.* Briss. *Règne Anim. p.* 260. *sp.* 2. *Ours Blanc;* Buff. *Supp. tom.* 3. *pl.*34. *Ours Blanc:* Desm. *Mam. p.* 16. *sp.* 257. *The Polar Bear:* Penn. *Syn. quad. p.* 192. *tab.* 20. *fig.* 1. Pallas, *spicil. Zool.* xiv. *tab.* 1.—Menagerie Living Animals, exhibited in Philadelphia, winter of 1832—3.

In the desolate regions of the north, where unrelenting winter reigns in full appanage of horrors during the greater part of the year, and even the stormy ocean itself is long imprisoned by "thick ribbed ice," the Polar Bear finds his most congenial abode. There, prowling over the frozen wastes, he satiates his hunger on the carcasses of whales deserted by the adventurous fishermen, or seizes on such marine animals as come up to bask in open air; and when occasion calls, he fearlessly plunges into the sea in pursuit of his prey, as if the deep were his native and familiar element. To most other animals extreme cold is distressing and injurious; to him it is welcome and delightful: to him the glistening ice-bank or snow-wreathed shore, canopied by louring and tempestuous clouds, are far more inviting and agrecable, than verdant hills or sunny skies.

Being endowed with extremely acute senses, great strength, and a savagely ferocious disposition withal, it is not surprising that this animal is dreaded as the most formidable quadruped of the region he inhabits. Notwithstanding his great size and apparent heaviness, he is very active, and though his ordinary gait may appear clumsy, when excited by rage or hunger, his speed on the ice far exceeds that of the swiftest man.

When on an extensive ice-field, the Polar Bear is often observed to ascend the knobs or hummocks, for the purpose of reconnoitering, or he stands with head erect to snuff the tainted air, which informs him where to find the whale carrion at astonishing distances. This substance, so unpleasant and disgusting to human sense, is a luxurious banquet to the bear, and a piece of it thrown on a fire will allure him from a distance of several miles.

A considerable part of the Polar Bear's food is supplied by seals, but very probably he suffers long fasts and extreme hunger, owing to the peculiar vigilance of these creatures; occasionally he is much reduced by being carried out to sea on a small island of ice, where he may be forced to remain for a week or more without an opportunity of procuring food. In this situation they have been seen on ice-islands two hundred miles distant from land, and sometimes they are drifted to the shores of Iceland, or Norway, where they are so ravenous as to destroy all the animals they find. Most commonly such invaders are soon destroyed, as the natives collect in large numbers and commence an immediate pursuit, but frequently do not succeed in killing them, before many of their flocks are thinned. An individual Polar Bear has occasionally been carried on the ice as far south as Newfoundland, but this circumstance very rarely occurs.

This animal swims excellently, and advances at the rate of three miles an hour. During the summer season he principally resides on the ice-islands, and leaves one to visit another, however great be the distance. If interrupted while in the water, he dives and changes his course; but he neither dives very often, nor does he remain under water for a long time. Captain Ross saw a Polar Bear swimming midway in Melville Sound, where the shores were full forty miles apart, and no ice was in sight large enough for him to have rested on. The best time for attacking him is when he is in the water; on ice or land he has so many advantages that the aggressor is always in danger. Even in the water he has frequently proved a formidable antagonist, has boarded and taken possession of a small boat, forcing the occupants to seek safety by leaping overboard. Instances are related in which this animal has climbed up the sides of small vessels, and been with difficulty repelled from the deck.

Generally the Polar Bear retreats from man; but when pursued and attacked he always resents the aggression, and turns furiously on his enemy. When struck at with a lance, he is very apt to seize and bite the staff in two, or wrest it from the hands. Should a ball be fired at him, without taking effect in the head or heart, his rage is increased, and he seeks revenge with augmented fury. It has been remarked that, when wounded and able to make his escape, he applies snow to the wound, as if aware that cold would check the flow of blood.

A great majority of the fatal accidents following engagements with the Polar Bear, have resulted from imprudently attacking the animal on the ice. Scoresby, in his interesting narrative of a voyage to Greenland, relates an instance of this kind. "A few years ago, when one of the Davis' Strait whalers was closely beset among the ice at the 'south west,' or on the coast of Labrador, a bear that had been for some time seen near the ship, at length became so bold as to approach alongside, probably tempted by the offal of the provision thrown overboard by the cook. At this time the people were all at dinner,

no one being required to keep the deck in the then immovable condition of the ship. A hardy fellow who first looked out, perceiving the bear so near, imprudently jumped upon the ice, armed only with a handspike, with a view, it is supposed, of gaining all the honour of the exploit of securing so fierce a visitor by himself. But the bear, regardless of such weapons, and sharpened probably by hunger, disarmed his antagonist, and seizing him by the back with his powerful jaws, carried him off with such celerity, that on his dismayed comrades rising from their meal and looking abroad, he was so far beyond their reach as to defy their pursuit."

"A circumstance, communicated to me by Captain Munroe of the Neptune, of rather a humorous nature as to the result, arose out of an equally imprudent attack made on a bear, in the Greenland fishery of 1820, by a seaman employed in one of the Hull whalers. The ship was moored to a piece of ice, on which, at a considerable distance, a large bear was observed prowling about for prey. One of the ship's company, emboldened by an artificial courage, derived from the free use of rum, which in his economy he had stored for special occasions, undertook to pursue and attack the bear that was within view. Armed only with a whale-lance, he resolutely, and against all persuasion, set out on his adventurous exploit. A fatiguing journey of about half a league, over a yielding surface of snow and rugged hummocks, brought him within a few yards of the enemy, which, to his surprise, undauntedly faced him, and seemed to invite him to the combat. His courage being by this time greatly subdued, partly by evaporation of the stimulus, and partly by the undismayed and even threatening aspect of the bear, he levelled his lance, in an attitude suited either for offensive or defensive action, and stopped. The bear also stood still; in vain the adventurer tried to rally courage to make the attack; his enemy was too formidable, and his appearance too imposing. In vain also he shouted, advanced his lance, and made feints of attack; the enemy, either not understanding or despising such unmanliness, obstinately stood his ground. Already the limbs of the sailor began to quiver; but the fear of ridicule from his messmates had its influence, and he yet scarcely dared to retreat. Bruin, however, possessing less reflection, or being regardless of consequences, began, with audacious boldness, to advance. His nigh approach and unshaken step subdued the spark of bravery and that dread of ridicule that had hitherto upheld our adventurer; he turned and fled. But now was the time of danger; the sailor's flight encouraged the bear in turn to pursue, and being better practised in snow-travelling, and better provided for it, he rapidly gained upon the fugitive. The whale-lance, his only defence, encumbered him in his retreat, he threw it down, and kept on. This fortunately excited the bear's attention; he stopped, pawed it, bit it, and then renewed the chase. Again he was at the heels of the panting seaman, who, conscious of the favourable effects of the lance, dropped one of his mittens; the stratagem succeeded, and while Bruin again stopped to examine it, the fugitive, improving the interval, made considerable progress a-head. Still the bear resumed the pursuit with a most provoking perseverance, except when arrested by another mitten, and, finally, by a hat, which he tore to shreds between his fore-teeth and paws, and would, no doubt, soon have made the incautious adventurer his victim, who was now rapidly losing strength, but for the prompt and well-timed assistance of his shipmates—who, observing that the affair had assumed a dangerous aspect, sallied out to his rescue. The little phalanx opened him a passage, and then closed to receive the bold assailant. Though now beyond the reach of his adversary, the dismayed fugitive continued onwards, impelled by his fears, and never relaxed his exertions, until he fairly reached the shelter of his ship. The bear once more came to a stand, and for a moment seemed to survey his enemies, with all the consideration of an experienced general; when, finding them too numerous for a hope of success, he very wisely wheeled about, and succeeded in making a safe and honourable retreat."*

The Polar Bear is stated to be generally four or five feet high, from seven to eight feet long, and nearly the same in circumference. Individuals have frequently been met with of much greater size; Barentz killed one in Cherie Island, whose skin measured thirteen feet.† The weight is generally from six to eight hundred pounds. The hair of the body is long, and of a yellowish white colour, and is very shaggy about the inside of the legs. The paws are seven inches or more in breadth, with claws two inches long. In some individuals, the canine teeth have been found an inch and a half long, exclusive of the portion imbedded in the jaw: the strength of the jaws is very great, and enables the animal to inflict dreadful injury when he bites.

The following measurements are from an individual,

* Scoresby's Greenland Voyage.

† Desmarest states in a note that the largest individuals of this species which have been observed, are not more than six feet seven inches long. This does not agree with the accounts given by many northern voyagers: we have selected Captain Ross' measurements, (not because the individual from which they were taken is the largest that has been seen,) but because his scientific character is so generally and advantageously known. It would have been very easy to have selected measurements of larger specimens, from other sources.

killed during Captain Ross' voyage, in the vicinity of Prince William's Sound:—

Length, from the snout to the tail,	6 feet	8 inches.
to the shoulder-blade,	2	10
Circumference near the fore-legs,	6	
of the neck,	3	2
Breadth of the fore-paw,		10
of the hind-foot,		8½
Circumference of the hind-leg,	1	10
of the fore-leg,	1	8
of the snout, before the eyes,	1	8
Length of the snout to the occiput,	1	6
Height to the fore-shoulder,	4	
Fore-claws,		2½
Hind-claws,		1¾
Tail,	4	

Weight of the animal, after losing thirty pounds of blood, 1131½ pounds.

We have stated that the Polar Bear preys on seals, fish, and the carcasses of whales; it also preys on birds, and their eggs, and not unfrequently destroys young whales and walruses: it is also said to disinter human bodies, and devour them with great greediness. Occasionally they break into the huts of the Greenlanders, attracted by the smell of seal's flesh, on which these people almost exclusively subsist. Yet we are credibly informed, that, when their accustomed food is to be obtained in sufficient quantity, they neither show much disposition to attack men, nor cattle, however accessible these may be.

In the morse or walrus, this bear has an enemy of great power and fierceness, with which he has at times dreadful combats, most generally terminating in the defeat of the bear, as the walrus is armed with long tusks, capable of giving deadly wounds. The whale is also a perpetual enemy of the Polar Bear, chasing him from the waters it frequents, and killing him by blows with its tail. Notwithstanding, the bear succeeds in catching and feasting on many of the young whales.

The dwelling place of the Polar Bear on shore, is by no means well ascertained, but is most probably in caves, or in some well concealed situation; it has been stated, that they reside, during winter, in excavations made in the permanent ice—but Fabricius, from personal observation, declares the statement to be incorrect. Certainly this animal does not often go to any great distance from the sea, on which he is almost exclusively dependent for food. Hence the flesh of the Polar Bear is generally fishy and rank, though it is said to be whitish, and similar to mutton. Captain Cook's people always preferred it to the flesh of the walrus or morse, yet they never considered it a very desirable food, except when none other was to be obtained. The fat resembles tallow, becoming as clear as whale-oil after liquefaction, and free from disagreeable smell; the oil obtained from the feet has been used medicinally, but except in fineness, has no qualities which the oil of other parts does not possess.

One of the most singular facts relative to the Polar Bear is, that its liver is to a great degree poisonous, a circumstance unknown in almost every other animal. Three of Barent's sailors were very much injured by eating of it; and Captain Ross, in his late Arctic voyage, verified the observation by experiment. The principle which imparts this noxious quality to the liver, is as yet undiscovered; we know of no article of diet used by the animal to which it can be attributed, and even if we did, this would not account for the deleteriousness of the liver, while all other parts of the body remain free from any injurious property.

The skin of the Polar Bear, dressed with the hair on, forms very substantial mats for carriages, or hall floors. The Greenlanders sometimes take it off without ripping up, and inverting the skin, form a very warm sack, which serves the purpose of a bed, the person getting into it in order to sleep comfortably. It cannot well be dressed at any other than the winter season, on account of its great greasiness when freshly removed from the animal. The nations residing in the vicinity of Hudson's Bay dress it in the following manner: they first stretch it out on a smooth patch of snow, and stake it down, where it soon becomes stiffly frozen. While in this condition the women scrape off all the fat till they come to the very roots of the hair. It is occasionally permitted to remain in that situation for a considerable time, and when taken up it is suspended in the open air. When the frost is very intense, it dries most perfectly; with a little more scraping it becomes entirely dry and supple, both skin and hair being beautifully white. Notwithstanding that this Bear is so large and powerful, his skin is both light and spongy.

The time of the year at which the sexes seek each other is not positively known, but it is most probably in the month of July, or of August. Hearne, who is an excellent authority, relates that he has seen them killed during this season, when the males exhibited an extreme degree of attachment to their companions. After a female was killed, the male placed his fore paws over her, and allowed himself to be shot rather than relinquish her dead body.

The pregnant females during winter seek shelter near the skirt of the woods, where they excavate dens in the deepest snow-drifts, and remain there in a state of torpid

inaction, without food, from the latter part of December or January till about the end of March; then they relinquish their dens to seek food on the sea-shore, accompanied by their cubs, which are usually two in number. The size of the cubs is very small; when they first leave the cave with the mother they are not larger than rabbits; yet we have seen that the weight of the full grown animal sometimes exceeds a thousand pounds. Hearne states that he has seen them not larger than a white fox, and their foot-prints on the snow not larger than a crown piece, when the impression of their dam's foot measured upwards of fourteen inches long by nine in breadth. This length and breadth appear excessive, and were probably rather more than the actual size of the foot itself, as the impression of the hair projecting over the feet would give an appearance in the snow which might lead to an incorrect notion of the size of the animal. The enterprising observer above mentioned is of opinion that these animals breed when very young, or at least when half grown, as he has killed young females "not larger than a London calf," having milk in their teats; "whereas one of the full grown ones are heavier than the largest of our common oxen. Indeed, I was once at the killing of one, when one of its hind feet, being cut off at the ancle, weighed fifty-four pounds.

The female Polar Bear is as rugged in her appearance, and as savagely ferocious in disposition, as her mate; yet to her offspring she displays a tenderness of affection which strongly contrasts with her fierce and sanguinary temper. When her cubs are exposed, danger has no existence to her, and nothing but death can compel her to desist from struggling desperately to defend or save them. The death of her offspring is with great difficulty acknowledged by the parent; when they are shot by her side the poor beast solicits their attention by every fond artifice, and endeavours to awaken them from their unnatural sleep: she offers them food, licks their wounds, caresses and moans over them in such a manner as to evince a degree of feeling which could scarcely be anticipated from so rude and terrible a quadruped.

Numerous instances of this fondness of attachment have been observed, and some of them attended with most singular displays of sagacity on the part of the mother. The following circumstance is related in Scoresby's account of the Arctic Regions, and is entitled to the fullest credence, because coming from so competent and excellent an observer:

"A she-bear, with her two cubs, were pursued on the ice by some of the men, and were so closely approached, as to alarm the mother for the safety of her offspring. Finding that they could not advance with the desired speed, she used various artifices to urge them forward, but without success. Determined to save them, if possible, she ran to one of the cubs, placed her nose under it, and threw it forward as far as possible; then going to the other, she performed the same action, and repeated it frequently until she had thus conveyed them to a considerable distance. The young bears seemed perfectly conscious of their mother's intention, for as soon as they recovered their feet, after being thrown forward, they immediately ran on in the proper direction, and when the mother came up to renew the effort, the little rogues uniformly placed themselves across her path, that they might receive the full advantage of the force exerted for their safety."

The most affecting instance on record of the maternal affection exhibited by this bear, is related in one of the Polar Voyages; it conveys so excellent an idea of this creature's strong feeling of parental love, that we should deem the history of the animal imperfect, were such an illustration omitted.

"Early in the morning, the man at the mast-head gave notice that three bears were making their way very fast over the ice, and directing their course towards the ship. They had probably been invited by the blubber of a sea-horse, which the men had set on fire, and which was burning on the ice at the time of their approach. They proved to be a she-bear and her two cubs; but the cubs were nearly as large as the dam. They ran eagerly to the fire, and drew out from the flames part of the flesh of the sea-horse, which remained unconsumed, and ate it voraciously. The crew from the ship threw great pieces of the flesh, which they had still left, upon the ice, which the old bear carried away singly, laid every piece before her cubs, and dividing them, gave each a share, reserving but a small portion to herself. As she was carrying away the last piece, they levelled their muskets at the cubs, and shot them both dead; and in her retreat, they wounded the dam, but not mortally.

"It would have drawn tears of pity from any but unfeeling minds, to have marked the affectionate concern manifested by this poor beast, in the last moments of her expiring young. Though she was sorely wounded, and could but just crawl to the place where they lay, she carried the lump of flesh she had fetched away, as she had done the others before, tore it in pieces, and laid it down before them; and when she saw they refused to eat, she laid her paws first upon one, and then upon the other, and endeavoured to raise them up. All this while it was piteous to hear her moan. When she found she could not stir them, she went off; and when at some distance, looked back and moaned; and that not availing to entice them

away, she returned, and smelling around them, began to lick their wounds. She went off a second time, as before; and having crawled a few paces looked again behind her, and for some time stood moaning. But still her cubs not rising to follow her, she returned to them again, and with signs of inexpressible fondness, went round first one and then the other, pawing them, and moaning. Finding at last that they were cold and lifeless, she raised her head towards the ship, and growled her resentment at the murderers; which they returned with a volley of musket balls. She fell between her cubs, and died licking their wounds."

The sagacity of the Polar Bear is well known to the whale fishers, who often find all their ingenuity insufficient to entrap him, as the following instance may serve to show. A noose, baited with a piece of "*kreng*," or whale carcass, was placed at a proper distance from the ship, which soon attracted the attention of a large bear. In attempting to secure the bait, the animal by some movement drew the noose, so as to catch him by one of his fore-paws. Apparently unconcerned by this circumstance, and conscious of knowing how to free himself from restraint, he quietly loosened the slip-knot with the other paw, and leisurely walked off to enjoy his morsel. The trap was again baited, and the bear once more approached to obtain his favourite food, but, grown wise by experience, he carefully avoided the rope, and carried off the bait, to the mortification of the captain, who wished to obtain his skin. The whaler, resolved to baffle the address of the bear, re-arranged his noose once more, carefully burying the rope at a considerable depth in the snow: but his precautions were unavailing; the bear cautiously examined the vicinity, scented the ground with attention, detected the situation of the rope, dug it up and threw it out of his way; then securing his prize, he once more triumphantly withdrew to enjoy it.*

Captain Scoresby shot a she-bear and took her two cubs alive, as they did not offer to leave the body of their mother, and he kept them on board of his ship, until they were tame enough to be allowed to go about the deck. On one occasion a cub, tied by the neck with a long rope, was allowed to go out of the ship, when he immediately swam to the ice, and as soon as he attained it, made a violent effort to break the rope by running at full speed until he put the rope as suddenly on the stretch as possible. Failing in his first attempt, he went back far enough to slacken the cord, and again renewed his race, in order, if possible, to break it. Convinced by these experiments, that it was a hopeless attempt, he lay down, sullenly growling his vexation. Another artifice resorted to by this animal was still more singular; passing a chasm or fissure in the ice, about eighteen inches or two feet wide, and three or four feet deep, the slack, (or bight) of his rope dropped into it; young Bruin returned, and going down head foremost into the chasm, he hung by the edges, holding on with one hind-foot on each side of it, and tried with both his fore-paws to loosen the rope and slip it off his head, as if he was aware that in this position he would be assisted by the weight of the portion which had dropped lower into the cavity.

The Polar Bear, like the other species of this genus, is able to live exclusively on vegetable food, as has been repeatedly proved by experiment on those brought to Europe. One which was exhibited in France, ate six pounds of bread a-day, and was altogether fed with this substance. It appears that the carnivorous habits of this animal, are greatly dependent on the circumstances of its situation, for being placed where vegetation is exceedingly scanty, if it even exists at all, and surrounded by seals, fish, &c., there can be no choice; notwithstanding, the animal is provided by nature with proper organs for the mastication and digestion of vegetable food.

The Polar Bear in captivity seems to suffer much from heat, which renders his confinement very uncomfortable, as is expressed by his restlessness and roaring. This is in some degree quieted by repeatedly throwing buckets of cold water over his body, which is always grateful and refreshing.

As far north as navigators have yet advanced, Polar Bears have been found, but their numbers evidently diminish where seals are scarce, while they are very numerous where seals are found in greatest abundance. Near the east coast of Greenland they have been seen in large flocks, at a distance resembling sheep more than beasts of prey. On the shores of the Arctic Ocean, Spitzbergen, Greenland, and Nova Zembla, from the river Ob in Siberia, to the mouths of the Jenesei and Lena, and in the vicinity of Hudson's Bay, they are found in various degrees of abundance.

The Polar Bear is peculiarly distinguished from other species of this genus by the length of the body, compared with its height, by the length of the neck, the smallness of the external ears, and length of the soles of the feet; which, according to Cuvier, are one-sixth of the whole length of the animal. In the fineness and length of its pelage it also differs materially from the other species. The forehead and muzzle of the Polar Bear are nearly on the same line, or flat; while in the European or brown bear, they are separated by a deep depression. In the

* See Scoresby's Arctic Regions, vol. 1, whence several of these anecdotes are sketched.

black, or American bear, the profile is rather an arched line, and in the grizzly bear it is slightly convex between the eyes. The forehead of the Polar Bear is flat; the European bear has it rounded. The Polar Bear has the head narrow and the muzzle large; the brown bear has the head large and the muzzle narrow.—*Godman's Nat. Hist.*

SWALLOWS.

The house-swallow, or chimney-swallow, is, undoubtedly, the first comer of all the British hirundines; and appears in general on or about the 13th of April, as I have remarked from many years' observation. Not but now and then a straggler is seen much earlier: and, in particular, when I was a boy I observed a Swallow for a whole day together on a sunny warm Shrove Tuesday; which day could not fall out later than the middle of March, and often happened earlier in February.

It is worth remarking, that these birds are seen first about lakes and mill-ponds; and it is also very particular, that if these early visitors happen to find frost and snow, as was the case of the two dreadful springs of 1770 and 1771, they immediately withdraw for a time; a circumstance this, much more in favour of hiding than migration; since it is much more probable that a bird should retire to its hybernaculum just at hand, than return for a week or two only to warmer latitudes.

The Swallow, though called the chimney-swallow, by no means builds altogether in chimneys, but often within barns and out-houses against the rafters; and so she did in Virgil's time—

——— ——"Ante
Garrula quam tignis nidos suspendat hirundo."

In Sweden she builds in barns, and is called *ladu swala*, the barn-swallow. Besides, in the warmer parts of Europe there are no chimneys to houses, except they are English built; in these countries she constructs her nests in porches, and gate-ways, and galleries, and open halls.

Here and there a bird may affect some odd, peculiar place; as we have known a swallow build down the shaft of an old well, through which chalk had been formerly drawn up for the purpose of manure; but, in general, with us this hirundo breeds in chimneys, and loves to haunt those stacks where there is a constant fire, no doubt for the sake of warmth. Not that it can subsist in the immediate shaft where there is a fire, but prefers one adjoining to that of a kitchen, and disregards the perpetual smoke of that funnel, as I have often observed with some degree of wonder.

Five or six, or more feet down the chimney, does this little bird begin to form her nest about the middle of May, which consists, like that of the house-martin, of a crust or shell composed of dirt or mud, mixed with short pieces of straw, to render it tough and permanent; with this difference, that whereas the shell of the martin is nearly hemispheric, that of the Swallow is open at the top, and like half a deep dish: this nest is lined with fine grasses and feathers, which are often collected as they float in the air.

Wonderful is the address which this adroit bird shows all day long in ascending and descending with security through so narrow a pass. When hovering over the mouth of the funnel, the vibrations of her wings acting on the confined air occasion a rumbling like thunder. It is not improbable that the dam submits to this inconvenient situation so low in the shaft, in order to secure her broods from rapacious birds, and particularly from owls, which frequently fall down chimneys, perhaps in attempting to get at these nestlings.

The Swallow lays from four to six white eggs, dotted with red specks, and brings out her first brood about the last week in June, or the first week in July. The progressive method by which the young are introduced into life is very amusing: first, they emerge from the shaft with difficulty enough, and often fall down into the rooms below: for a day or so they are fed on the chimney top, and then are conducted to the dead leafless bough of some tree, where, sitting in a row, they are attended with great assiduity, and may then be called perchers. In a day or two more they become fliers, but are still unable to take their own food; therefore they play about near the place where the dams are hawking; and when a mouthful is collected, at a certain signal given, the dam and the nestling advance, rising towards each other, and meeting at an angle; the young one all the while uttering such a little quick note of gratitude and complacency, that a person must have paid very little regard to the wonders of nature that has not often remarked this feat.

The dam betakes herself immediately to the business of a second brood, as soon as she is disengaged from her first; which at once associates with the first broods of house-martins; and with them congregates, clustering on sunny roofs, towers, and trees. This hirundo brings out her second brood towards the middle and end of August.

All the summer long is the Swallow a most instructive pattern of unwearied industry and affection; for, from morning to night, while there is a family to be support-

ed, she spends the whole day in skimming close to the ground, and exerting the most sudden turns and quick evolutions. Avenues, and long walks under hedges, and pasture-fields, and mown meadows where cattle graze, are her delight, especially if there are trees interspersed; because in such spots insects most abound. When a fly is taken a smart snap from her bill is heard, resembling the noise at the shutting of a watch-case; but the motion of the mandibles is too quick for the eye.

The Swallow, probably the male bird, is the excubiter to house-martins, and other little birds, announcing the approach of birds of prey. For as soon as a hawk appears, with a shrill alarming note, he calls all the Swallows and martins about him; who pursue in a body, and buffet and strike their enemy till they have driven him from the village, darting down from above on his back, and rising in a perpendicular line in perfect security. This bird also will sound the alarm, and strike at cats when they climb on the roofs of houses, or otherwise approach the nests. Each species of hirundo drinks as it flies along, sipping the surface of the water; but the Swallow alone, in general, washes on the wing, by dropping into a pool for many times together: in very hot weather house-martins and bank-martins dip and wash a little.

The Swallow is a delicate songster, and in soft sunny weather sings both perching and flying, on trees in a kind of concert, and on chimney tops; is also a bold flier, ranging to distant downs and commons even in windy weather, which the other species seem much to dislike; nay, even frequenting exposed seaport towns, and making little excursions over the salt water. Horsemen on wide downs are often closely attended by a little party of Swallows for miles together, which plays before and behind them, sweeping around, and collecting all the skulking insects that are aroused by the trampling of the horses' feet. When the wind blows hard, without this expedient, they are often forced to settle to pick up their lurking prey.

This species feeds much on little *coleoptera*, as well as on gnats and flies, and often settles on dug grounds, or paths, for gravels to grind and digest its food. Before they depart, for some weeks, to a bird they forsake houses and chimneys, and roost in trees, and usually withdraw about the beginning of October, though some few stragglers may appear on at times till the first week in November.

Some few pairs haunt the new and open streets of London next the fields, but do not enter, like the house-martin, the close and crowded parts of the city.

Both male and female are distinguished from their congeners by the length and forkedness of their tails. They are undoubtedly the most nimble of all the species; and when the male pursues the female in amorous chase, they then go beyond their usual speed, and exert a rapidity almost too quick for the eye to follow.

After this circumstantial detail of the life and discerning ἀπαρχὴ of the Swallow, I shall add, for your farther amusement, an anecdote or two, not much in favour of her sagacity:—

A certain Swallow built for two years together on the handles of a pair of garden-shears, that were stuck up against the boards in an out-house, and therefore must have her nest spoiled whenever that implement was wanted. And, what is stranger still, another bird of the same species built its nest on the wings and body of an owl that happened by accident to hang dead and dry from the rafter of a barn. This owl, with the nest on its wings, and with eggs in the nest, was brought as a curiosity worthy the most elegant private museum in Great Britain. The owner, struck with the oddity of the sight, furnished the bringer with a large shell, or conch, desiring him to fix it just where the owl hung. The person did as he was ordered; and the following year a pair, probably the same pair, built their nest in the conch, and laid their eggs.

The owl and the conch made a strange, grotesque appearance, and are not the least curious specimens in that wonderful collection of art and nature.*

Thus is instinct in animals, taken the least out of its way, an undistinguishing, limited faculty, and blind to every circumstance that does not immediately respect self-preservation, or lead at once to the propagation or support of their species.—*Nat. Hist. of Selborne.*

THE LESSER AMERICAN FLYING SQUIRREL.

It would be difficult to find in the entire class of quadrupeds a more graceful little creature, or one better fitted for a lady's pet, than this elegant animal. Its diminutive size, the singularity of its form, the expression of its physiognomy, the vivacity of its motions, and the gentleness of its disposition, all combine to render it one of the most interesting, as well as the most beautiful, of a beautiful and interesting tribe.

The group to which this attractive little animal belongs are principally distinguished from the common Squirrels by what is usually termed their flying membrane. This apparatus consists of a folding of the skin along either side so as to form broad late-

* Sir Ashton Lever's Museum.

ral expansions, supported anteriorly and posteriorly by the limbs between which they are extended, and by peculiar bony processes arising from the feet. These expansions are not naked and membranous like those of the bats, but are actual continuations of the skin clothed externally by a dense fur similar to that which invests every other part of the body. Neither do they serve, like the flying membranes of many of the bats, the purposes of wings; their functions being limited to that of a parachute, giving to the animal a considerable degree of buoyancy, and thus enabling it to take leaps of almost incredible extent, through which it passes with the velocity of an arrow. The name of Flying Squirrels is consequently founded on an erroneous assumption; but it may nevertheless be admitted as a metaphorical expression of their most distinguishing peculiarity.

The Flying Squirrels were but little known to the earlier naturalists. Even down to the time of Linnæus no clear distinction was made between those of America and the Polatouche of Siberia and northern Europe. It was Pallas who first pointed out with precision the actual differences between the latter and the more common of the American species, which had been figured by Buffon under the Polish name in the erroneous idea that it was really the Polatouche. A third species was indicated by Foster in a brief notice of a collection made in Hudson's Bay, published in the Philosophical Transactions. This has since been more fully characterized by Dr. Richardson, who, however, appears to be by no means satisfied of the correctness of its separation from the species found in the north of the Old Continent. The same distinguished traveller had himself added a fourth to the list from the valleys of the Rocky Mountains; but he has subsequently reduced it to the rank of a variety only, and offers a guarded opinion that both it and the last may, without much violence, be united to the Polatouche. In that case the Flying Squirrels of the temperate zone would all be still referable to the two species originally established by Pallas. They closely agree in general form with the true Squirrels; but are of a smaller size, have rounder heads, and larger and more prominent eyes.

The lesser Flying Squirrel is little more than half as large as the more northern species, from which it also differs in many particulars of form, colouring, and habits. Its tail is longer in proportion, measuring three-fourths of the length of the head and body; and its head is somewhat more produced in front. On its upper surface the animal is of a bright mouse-colour, with a tinge of fawn, which is entirely wanting in the other species; the under surface is nearly pure white. The lateral expansions have fawn-coloured margins, bordering a black band; and with only a slight rounded lobe at their anterior extremity on either side. The tail is of the same colour as the body, but more dusky beneath; the eyes are surrounded by broad black circles; the whiskers are long and black; and the ears rather large, somewhat pointed at the tips, and nearly naked on the surface. The length of the head and body never exceeds five inches.

Like the other Squirrels these animals feed on nuts, acorns, and young shoots. Of the former they store up a sufficient quantity for their winter subsistence in their nests, which are built on trees in a very artificial manner, and are each capable of containing several individuals. They seldom stir out during the day, but become lively and active during the night, foraging in parties of ten or twelve, and bounding from tree to tree with astonishing agility. "They will fly," says Catesby, "fourscore yards from one tree to another. They cannot rise in their flight, nor keep in a horizontal line, but descend gradually, so that in proportion to the distance the tree they design to fly to is from them, so much the higher they mount on the tree they fly from, that they may reach some part of the tree, even the lowest, rather than fall to the ground, which exposes them to peril. But having once recovered the trunk of a tree, no animal seems nimble enough to take them." In captivity they seem to be perfectly happy and contented, and though shy at first, soon become familiar with those who treat them with kindness.

[*Gardens of Zoological Society.*

EMIGRATION OF BIRDS.

Amongst the dispensations of an inscrutable Providence, the migrations of birds is not the least wonderful, and must be interesting to the sportsman, as well as to the philosopher. While we are perfectly aware of the facts, we are at a loss to account for the manner in which an animal apparently incapable of a journey even of an ordinary length, continues to make its way over an amazing extent of unfathomable ocean. Perhaps the most extraordinary part of this mysterious circumstance is, that while those birds, whose superior powers of wing seem in some degree calculated for these extraordinary flights, are not unfrequently observed in their passage, there are others, that appear altogether incapable of flying five miles, which nevertheless make their way over an extent of ocean, perhaps of five hundred miles!

That sea fowl, adapted either for flying or swimming, and whose food is always near, should take long journies, seems reasonable enough, from their evident powers to

accomplish such undertakings; further, it is not altogether so wonderful that swallows should be able to reach distant countries, because they not only fly with amazing speed, but are able to continue a great length of time on the wing; but the case is very different with a variety of other migratory birds, which are ill-calculated for long flights, which are never seen on their journey, but which, however, reach their places of destination.

The swallow tribe visits us in spring, and, with their progeny, quit the country on the approach of winter, when their food is no longer to be found. That they traverse the ocean is an incontestible fact, as many navigators have been eye witnesses of their flights, and whose ships have sometimes afforded them resting places on their toilsome journey. Yet, there are not wanting writers, who assert that swallows do not quit this country; but that they lie concealed, and in a torpid state, during winter, under water; that the martins hide themselves during the same period in crevices of rocks, and other lurking places above ground; that the sand martins remain in the holes in which they formed their nests; and that the swifts continue all winter in their holes in churches and buildings. It is very probable that some of the later hatches, not able to undertake the long journey, may have been found in crevices and holes rather later than the general migration, but that they must shortly perish is beyond a doubt: while nothing can be more ridiculous than to suppose the chimney swallow buries itself beneath the flood, where it continues for six or seven months! Such opinions, ushered into the world through the medium of the press, induced the late celebrated Mr. John Hunter to examine the subject anatomically; and on dissecting several swallows, he observed in them nothing differing from other birds in the organs of respiration; and concluded, without the least hesitation, that nothing could be more absurd than to suppose they could remain for a long time under water.

However, from the very formation and habits of the swallow tribe, it requires little or no stretch of credulity to believe them capable of crossing the sea from one country to another. The woodcock also, it must be admitted, crosses the ocean: this bird certainly does not appear so admirably calculated for a long flight as the swallow, yet it possesses a considerable extent of wing; and though apparently so sluggish when flushed by the sportsman, little doubt can be entertained that it is sufficiently active and strong in flight to transport itself to very considerable distances. The woodcock does not see well in the broad glare of daylight, and at this period reluctantly takes wing; but every sportsman must be very well aware how much more active this bird rises in the dusk of the evening. They cross the sea in the night, as the circumstance of their frequently striking against light-houses sufficiently testifies; and in stormy weather, it is very well known, numbers of them perish in the adventurous journey.

The quail is also a bird of passage, though it is not easy to imagine how a bird so ill calculated for extensive locomotion is able to effect those long journies which appear indispensable to its habits. Quails are not general in England; but they visit some parts of it in the month of April, and leave it in September; and are supposed to winter in Africa. These birds, like the woodcock, prefer travelling in the night, and arrive at Alexandria in immense numbers: such prodigious quantities have also appeared on the western coast of the kingdom of Naples, that a hundred thousand have been caught in one day. In some parts of the south of Russia, they abound so greatly at the time of their migration, that they are caught by thousands and sent in casks to Moscow and St. Petersburgh. We are told, that quails assemble at the approach of autumn, to cross the Black Sea over to the southern coast: the order of this emigration is invariable: towards the end of August, the quails, in a body, choose one of those fine days, when the wind, blowing from the north at sunset, promises them a fine night. They take their departure about seven in the evening, and finish a journey of fifty leagues by break of day—a wonderful distance for a short winged bird, which is generally fat too, and sluggish of flight! Pliny says, quails ballast themselves in their sea voyages by carrying stones in their feet, or sand in their craw! If such an absurdity were swallowed by the ancient Romans, few will be found weak enough to believe it at the present day.

Now, we may certainly very readily admit the migration to other countries of the swallow, the woodcock, and the quail, from the incontestible authority which has been already recited; while the passage of various other birds, possessed of great power of wing, is equally placed beyond a doubt; but, how are we to account for the very extensive excursions of those birds, which appear by no means calculated for such undertakings, but whose invariable periodical visits, nevertheless, confirm the fact, though perhaps the means or the mode by which it is accomplished will remain for ever perhaps buried beneath impenetrable obscurity: for instance, how are we to suppose the corn crake, which flies with the utmost difficulty even for a few hundred yards, is able to cross an extent of ocean, which, upon the lowest estimate, must be one hundred times farther than the utmost efforts of its wing can carry it in this country?

Scarcity of food, and the want of a convenient situation

for the breeding and rearing their young, are the predominant causes of the migration of birds. The periods for these excursions are observed with the most astonishing order and punctuality; which has been illustrated as well as immortalized by Pope, in the following beautiful lines:—

> Who taught the nations of the field and flood
> To shun their poison and to choose their food?
> Prescient, the tides or tempests to withstand,
> Build on the wave, or arch beneath the sand?
> Who bid the stork, Columbus-like, explore
> Heav'ns not his own, and worlds unknown before?
> Who calls the council, states the certain day,
> Who forms the phalanx, and who points the way?
> See then the acting and comparing powers—
> One in *their* nature, which are two in *ours*;
> And *reason* raise o'er *instinct* as you can,
> In *this* 'tis God directs, in *that* 'tis man.

The secrecy of the departure of birds, as well as the suddenness of their re-appearance, have involved the subject of migration in great obscurity. Accustomed to measure distances by the speed of those animals with which we are well acquainted, we are apt to overlook the superior velocity with which birds are carried forward in the air, and the ease with which the generality of them continue their exertions for a much longer time than the strongest quadrupeds are able to effect. Suppose a bird to fly half a mile a minute* for twenty-four hours, in that space of time it will have gone over an extent of seven hundred miles, which is sufficient to account for almost the longest migration; and, if aided with favourable currents of air, which, when in their highest flights, from the appearance of the atmosphere, the clouds, direction of the winds, and other causes, they can apply by that instinctive knowledge which regulates their movements, the journey may be still more speedily performed. Hence I can very easily conceive it possible for strong-winged birds, like swallows, to reach vast distances across the ocean, as well as many others, (the cuckoo for instance,) whose powers of flight are very great, and yet inferior to those of the swallow. But, in regard to the corn crake, the case is different; and the only way in which I can think it possible for these birds to cross the sea, is by supposing that instinct directs them to the straits and narrowest parts, which, with the advantage of a strong current of air, they may be able to cross.

* And birds in general fly much faster. The flight of a crow is at least equal to half a mile a minute, or perhaps much more, what then must be the speed of that variety of the swallow, distinguished by the name of the swift, which I consider as possessing greater speed than any other animal in the known world.

The structure of birds is most wisely and curiously contrived to assist their aerial motion; in every part of their form they are active and buoyant, moulded for lightness, and shaped for celerity. The bones, according to the observations of the late celebrated anatomist, Mr. John Hunter, are hollow and contain air, which he imagined might be intended to assist the animal in the act of flying, by increasing its bulk and strength, without adding to its weight. The internal structure of birds is no less wisely adapted. The lungs are placed close to the backbone and ribs; the air, entering into them by a canal from the windpipe, passes through, and is conveyed into a number of membranous cells, which lie upon the sides of the pericardium, and communicate with those of the sternum. In some birds, these cells are continued down the wings, and extend even to the pinions, thigh bones, and other parts of the body, which can be filled and distended with air at the pleasure of the animal. It seems to be evident that this general diffusion of air through the bodies of birds is of infinite use in assisting respiration in the rapidity of their flights. Were it possible for a man to move with the swiftness of a swallow, the actual resistance of the air, as he is not provided with internal reservoirs similar to those of birds, would soon suffocate him.

The plumage of the bird is admirably adapted to protect it from the inclemency of the atmosphere through which it passes. The quills of its feathers are firm, yet very light; and by the firmness of them it is enabled to cleave the air with proper force; while, by their lightness, it elevates itself at pleasure. The feathers are placed generally according to their length and strength; so that in flight the longest and strongest feathers have the greatest share of duty. Nevertheless, the feathers of the bird would perpetually imbibe the moisture of the atmosphere, and in every impetuous shower would absorb so much wet, as almost, if not wholly, to impede its flight, had not the wise economy of nature obviated this by a most effectual expedient. The animal is furnished with a gland at the extremity of its body, containing a quantity of unctuous matter, which can be pressed out with its bill, and with which it lubricates and anoints its feathers at pleasure. However, as birds that share, as it were, the habitations of man, and live under cover, require a more slender supply of this fluid, they are not provided with so large a stock as those that rove and reside in the open elements. On this account, therefore, domestic poultry are soon affected by wet, a circumstance too well known to need further illustration in this place.

[*London Sportsman's Cabinet.*

THE GOLDEN PHEASANT.

Of all the species of Pheasants which are met with in our preserves and in our avaries, the Golden Pheasant is the rarest and the most beautiful. The male bird, when in perfect plumage, measures nearly three feet in length, of which the tail alone forms about two-thirds. The feathers of the fore part of the head are very long, silky, and of a bright yellow; and considerably overhang those of the hinder part, which are of a brilliant orange, marked with transverse black rays. These last are elongated and extended backwards over the sides of the neck, and may be raised or depressed at will. A few minute hairs are scattered over the cheeks, which are of a livid complexion. The feathers of the back of the neck are tinged with a mixture of green and gold, and bordered with black: those of the back and the upper tail-coverts are bright yellow, the latter terminating in a crimson border. Over the base of each wing is a broad patch of deep blue passing almost into violet; the wing-coverts and secondary quill-feathers offer various shades of chesnut and brown; and the primary quill-feathers are marked with reddish spots upon a brown ground. The tail-feathers are variegated with chesnut and black, the colours being disposed in oblique rays upon the lateral quills. Immediately above the base of the tail the feathers are of a beautiful scarlet. The throat is of a dusky brown; and all the rest of the under surface, including the neck, the breast, and the abdomen, is of a bright scarlet. The iris is bright yellow, as are also the bill and legs, but with a somewhat lighter tinge: the latter are furnished with moderate-sized spurs.

In the female, as is usual in this tribe of birds, the colours are infinitely less splendid than those of the male. The upper parts are of a rusty brown varying in intensity; the under surface is marked with spots of a deep brown on a lighter ground; the throat is nearly white; the wings are transversely barred with black; and the tail, which is considerably shorter than that of the male, is variegated like the wings.

These magnificent birds are natives of China; and it was warmly maintained by Buffon, in accordance with his theory of the degeneration of animals, that they were merely a variety of the common Pheasant, which had assumed a more splendid plumage in consequence of the superior fineness of the climate in which they dwelt. Unfortunately for this hypothesis the common Pheasant is also widely spread throughout the same region, in which it preserves all the characters by which it is distinguished in Europe, and never produces in its wild state a mixed breed with its supposed variety. No naturalist since Buffon has imagined such a transformation possible. In our menageries a mixed breed is sometimes obtained, but with the greatest difficulty, and the product is absolutely incapable of continuing the race. It requires indeed no small degree of care and attention to procure a breed from the Golden Pheasants themselves. Much of the difficulty, as well as much of the tenderness of constitution manifested by these birds, is attributed by M. Temminck to the close confinement in which they are usually kept, and to the very precautions which are taken to preserve them from the effects of cold. He advises that they should be gradually habituated, like the more common race, to the large pheasantries in which the latter are preserved, and doubts not, that as they multiplied under such circumstances, they would become more and more hardy, until at last they would be fully capable of supporting the cold of our northern winters. The experiment, he tells us, has already been made in Germany, where they have been kept at perfect liberty in an open pheasantry, in company with the common species, and suffered no greater inconvenience than the latter from the change of seasons.

[*Gardens of the Zoological Society.*

ON THE INJURY THE FARMER SUSTAINS FROM GAME.

It is generally considered that game is highly injurious to the farmer; and this idea is thoughtlessly converted into a sweeping accusation: looking entirely on the gloomy side of the question, without once considering that as good is frequently accompanied by evil, so we ought duly to weigh the matter in all its bearings, and by no means pronounce a hasty sentence. Hence as evils are frequently attended with their own correctives, let us carefully examine before we denounce, lest our thoughtless impetuosity should precipitate us into irksome and perhaps irremediable error.

With respect to feathered game, and the pheasant and partridge in particular, it must be allowed that both these birds will feed, and feed greedily too, upon most, if not all kinds of grain, as well as pulse; but they seldom pull down the ears or the stocks for this purpose: it is true, those ears of corn, on the exterior edges, which, from the weather or other causes, hang in a declining posture, and nearly touch the ground, may be deprived of some of their grains by these birds, and where the crop is thin and indifferent, they will run much amongst it, and thus make worse what is already sufficiently bad; but the injury which a thick full crop sustains from their depredations is

scarcely perceptible, nor are they inclined to run amongst it from any other motives than as a place of protection and security:—where the crop, however, happens to be thin, thus enabling them to run with the greatest facility, affording them greater safety, by enabling them, in some degree, to watch the motions of their enemy, they are scarcely ever from amongst it; here, in fact, they may be said to revel in luxury and security, and in such cases alone it is, that standing crops of grain sustain any serious injury from either pheasants or partridges. After the grain is cut, these birds feed regularly in the stubbles, and here they continue to feed while any food is to be met with. When the wheat is sown, (as by this time the stubbles are well cleared of the shed corn,) they will feed upon it, and the pheasants, (the cock in particular,) will not be content with the grains which may be found lying on the surface of the ground, but will scratch to find those which are covered with mould. The partridge does not appear to scratch the earth, though it will pick up the wheat on the surface. These are the most serious depredations which these birds commit on the labours of the husbandman; pheasants would seriously injure a newly sown field if suffered to pursue their inclinations unmolested; but nothing is more easy than to prevent the mischief which might thus ensue—a boy placed in the field with a rattle would be quite sufficient for the purpose. When the fields are covered with snow, or in hard weather, the pheasant will feed upon acorns, and almost any kind of berries which the hedges produce; while the partridge seeks the leaves of turnips, and will feed upon whatever it meets with of a vegetable complexion. On an impartial review of the case, therefore, it is abundantly evident, that the only injury done to the grain by these birds is at the period of sowing, particularly the wheat sowing; for as the other kinds of grain are not sown until spring, when food for these creatures is every where to be found in abundance, so at this time they are less to be dreaded.

Thus having stated the baneful qualities or mischievous propensities of the pheasant and the partridge, I cannot in justice pass over their useful habits in silence. I know it is the practice of some ill-tempered surly farmers, to complain loudly of the depredations of the birds I have just mentioned; and while they are venting their spleen in grumbling and complaint, they seem never to think of the great benefit they derive from the very creatures which they denounce as mischievous beyond all comparison. Now, if we take a fair and candid review of the other side of the question, it will be found that the benefit which is derived from the pheasant and partridge far outweighs any injury which can be sustained from even their worst of depredations. The young of either of these birds is no sooner excluded from the shell than they are led by the parent bird to the nearest ant hill, the roots of trees, or other places where insects are to be met with. Insects are sought with unwearied industry, as they constitute the entire food of the young for some time, and when they afterwards crop the grasses or herbage and begin to eat grain, they seek grubs, caterpillars, flies, and insects of all kinds as the most dainty fare, and which indeed seem indispensable to their existence; thus it frequently happens, that an ignorant farmer, when he sees these birds amongst his corn, flies into a passion, and swears he shall be ruined by them, at the very moment, when, by clearing his crop from the insects which would otherwise destroy it, they are rendering him the most essential service imaginable! It is a well known fact, at least to persons who have paid attention to the subject, that in all those districts where game is to be found in abundance, little or no injury is ever sustained by insects.

In this review of the evils and benefits arising from game, I leave red and black grouse out of the question; for, although they will both feed upon grain, it is only when the snow has driven the former from the mountains, that they have been seen to approach the inclosures, and in fact the same remark will, in a great degree, apply to the latter. But, if we examine the habits and propensities of the hare and the rabbit, perhaps the complaints of the agriculturist will be found entitled to more consideration, as far at least as regards the latter of these animals. The hare feeds upon clover, and upon all the milky plants, as well as upon corn, the ears of which she will bite off and eat before it is ripe; nevertheless, the depredations, even where hares are numerous, (at least in summer,) would be almost imperceptible, were it not for the runs which they make through the fields of standing corn, by which mischief cannot fail to ensue. When, however, they are found in something like reasonable numbers, even this is scarcely worth notice. In winter, hares are most to be dreaded; as in severe weather they will not only do considerable mischief amongst turnips and carrots, but irreparable injury to young trees also; though there are various modes of preventing them from gnawing the bark, and thus the greatest objection to these animals is effectually overturned. Further, if hares, and also pheasants and partridges, are provided with a little food in hard weather, their greatest injuries can never extend beyond a mere trifle, However, the case is widely different with the rabbit, which, upon a well cultivated estate, become, in a very short period, incalculably destructive. The rabbit feeds much in the same manner as the hare, and in this respect, therefore, he may be supposed on a

From Nature, and on Stone by J. G. Clonney.

SNIPE.

par; but the injury sustained from the rabbit arises much more from its habit of scratching and burrowing in the ground, than from the vegetation which it consumes; and as its fecundity is surprising, so its depredations become amazingly multiplied; and it is really astonishing in how short a time these diminutive animals will riddle, as it were, a very considerable extent of ground: nor indeed are they always content with burrows for the purpose of protection, but wherever rabbits are to be met with, numbers of superficial hollows or holes will be found, which, it might appear, these animals had made merely by the way of exercise. On every view of the case, therefore, rabbits should be confined to sand hills and the more barren grounds, where very little mischief can result from their habits, and where immense advantage may be derived from their astonishing fecundity.

Finally, I must observe, that having paid particular attention to the subject for some years, I feel a perfect conviction that much less injury is sustained from game than is generally imagined. I never feel the least objection to any of the tribe except rabbits: pheasants I regard as comparatively harmless; the good which results from them more than counterbalances the evil; and as to partridges, I should scarcely object to a covey on every acre, so convinced am I of the advantages derived from them, to say nothing of the increased animation and beauty which they give to the landscape.—*Sportsman's Cabinet.*

SNIPE.

SCOLOPAX GALLINAGO.

[Plate XX. J. Doughty's Collection.]

This bird is well known to our sportsmen; and, if not the same, has a very near resemblance of the common Snipe of Europe. It is usually known by the name of the *English Snipe*, to distinguish it from the woodcock, and from several others of the same genus. It arrives in Pennsylvania about the 10th of March, and remains in the low grounds for several weeks; the greater part then move off to the north, and to the higher inland districts to breed. A few are occasionally found, and consequently breed in our low marshes during the summer. When they first arrive, they are usually lean; but when in good order are accounted excellent eating. They are, perhaps, the most difficult to shoot of all our birds, as they fly in sudden zig-zag lines, and very rapidly. Great numbers of these birds winter in the rice grounds of the southern states, where, in the month of February, they appeared to be much tamer than they are usually here, as I frequently observed them running about among the springs and watery thickets. I was told by the inhabitants, that they generally disappeared early in the spring. On the 20th of March I found these birds extremely numerous on the borders of the ponds near Louisville, Kentucky; and also in the neighbourhood of Lexington, in the same state, as late as the 10th of April. I was told by several people, that they are abundant in the Illinois country, up as far as Lake Michigan. They are but seldom seen in Pennsylvania during the summer, but are occasionally met with in considerable numbers on their return in autumn, along the whole eastern side of the Alleghany, from the sea to the mountains. They have the same soaring irregular flight in the air in gloomy weather as the Snipe of Europe; the same bleating note, and occasional rapid descent; spring from the marshes with the like feeble *squeak;* and in every respect resemble the common Snipe of Britain, except in being about an inch less; and in having sixteen feathers in the tail instead of fourteen, the number said by Bewick to be in that of Europe. From these circumstances, we must either conclude this to be a different species, or partially changed by difference of climate; the former appears to me the more probable opinion of the two.

These birds abound in the meadows, and low grounds, along our large rivers, particularly those that border the Schuylkill and Delaware, from the 10th of March to the middle of April, and sometimes later, and are eagerly sought after by many of our gunners. The nature of the grounds, however, which these birds frequent, the coldness of the season, and peculiar shyness and agility of the game, render this amusement attractive only to the most dexterous, active, and eager of our sportsmen.

The Snipe is eleven inches long, and seventeen inches in extent; the bill is more than two inches and a half long, fluted lengthwise, of a brown colour, and black towards the tip, where it is very smooth while the bird is alive, but soon after it is killed becomes dimpled like the end of a thimble; crown black, divided by an irregular line of pale brown; another broader one of the same tint passes over each eye; from the bill to the eye there is a narrow dusky line; neck, and upper part of the breast, pale brown, variegated with touches of white and dusky; chin, pale; back and scapulars deep velvetty black, the latter elegantly marbled with waving lines of ferruginous, and broadly edged exteriorly with white; wings plain dusky, all the feathers, as well as those of the coverts, tipt with white; shoulder of the wing deep dusky brown, exterior quill edged with white; tail-coverts long, reaching within three-

quarters of an inch of the tip, and of a pale rust colour spotted with black; tail rounded, deep black, ending in a bar of bright ferruginous, crossed with a narrow waving line of black, and tipt with whitish; belly pure white; sides barred with dusky; legs and feet a very pale ashy green; sometimes the whole thighs, and sides of the vent, are barred with dusky and white, as in the figure in the plate.

The female differs in being more obscure in her colours; the white on the back being less pure, and the black not so deep. WILSON.

SCENERY OF THE WEST.

THE following passages are from Flint's tale of "Francis Berrian," which, though nominally a work of fiction, contains many fine delineations of natural scenery, by one who was fully competent to the task. The description of the drove of wild horses, and the notice of the manners of several birds in the beautiful sketch of the Commanches valley, will not, it is thought, be apart from the objects of this work.

"We closed our arrangements at Natchitoches, the last village in Louisiana, towards the Spanish frontier. I had occasion to experiment the truth of the remark, that in travelling towards the frontier, the decreasing scale of civilization and improvement exhibits an accurate illustration of inverted history. Improvements decrease in the order of distance, as they have increased in the order of time. We travelled down six centuries in as many days. First, we lost sight of handsome and commodious houses, residences of builders, who often saw good models. We gradually lost sight of the mansions of the opulent cotton-planters, who are noted for their hospitality. We lost sight of men dressed in articles of imported fabric. Then we traversed the belt of *vachers* and shepherds, with their blanket-capotes and their comfortable, but rustic log establishments. Then we traversed the regions of the half savage white inhabitants, the intermediate race between savage and civilized man. On the Kiamesia we passed the American garrison, and saw the cheering sight of the spirit-stirring stars and stripes, waving above the rude fortress and the comfortable quarters, three hundred leagues from the compact population of the country. We joined to admire the genius of a country yet so young, and which has thus early learned to stretch her maternal arms to these remote deserts, in token of efficient protection to the frontier people from the terrors of the ruthless savages.

"It was not far from this garrison that my eye dilated, and my heart expanded, as we opened upon one of those boundless grassy plains that stretch beyond the horizon, and almost beyond the imagination. Such a view presents to me the image of infinitude and eternity still more strongly, than a distant view of the ocean. We entered with the rising sun. One part of the disk of that glorious orb seemed to touch the verdure, and the other the sky. Here we met a company of Spanish muleteers descending with a drove of horses and mules to Louisiana. They were a new and striking variety of the species. They inhabit an arid soil, a dry climate, elevated table land, a plain, which is ventilated in its southern extremity by the unchangeable gales of the tropical sea, and on the north by breezes brought down from snow-capped mountains. They subsist on flesh and milk, and unfortunately of late, from their connexion with our country, they have added whiskey to their beverage. They almost live on horseback. The training and managing of horses and mules, and the noosing of them and of cattle by throwing the noosed rope, at which they acquire an incredible dexterity, constitute their employment. They are simple and timid, and seem less capable of combination of thought than the savages. Their most definite directions of places to us were towards the rising or the setting sun; and their most accurate measures of distance were *grande distancia*, or *poca distancia*, a great or a little distance. They have a peculiar physiognomy, repulsive at first sight, but on closer inspection amiable. I found them in fact, in the general, an extremely affectionate and amiable people. They are dressed in the tanned skins of their cattle and game, and their costume differs considerably in appearance from that of their neighbours, the French and the savages. For boots they wear a kind of leather leggings, which they call "buccarees," with huge silver spurs. They have a singular-shaped wooden saddle, covered with some kind of skins, with a circular and painted elevation of wood in front, and very large wooden stirrups. The hat is of great weight, and tapers in the crown like the apex of a cone. About the horse's neck they carry a great length of coiled rope of buffalo's hair, ready for the operation of noosing any animal that shall come in their way. They have also appended to the horse's neck a gourd or bottle, ready to drop into the stream or branch, through the channel of which they may pass, and dip up their water for drinking. When the carabine and spear are added to these equipments, and laid across the saddle at right angles to the horse's path, the rider, the horse, and the furnishing, taken together, afford a most uncouth and ludicrous figure.

"On these level plains some of my dreams of the plea-

sures of wandering were realized. We were all in the morning of life, full of health and spirits, on horseback, and breathing a most salubrious air, with a boundless horizon open before us; and shaping our future fortune and success in the elastic mould of youthful hope and imagination, we could hardly be other than happy. Sometimes we saw, scouring away from our path, horses, asses, mules, buffaloes, and wolves, in countless multitudes, and we took, almost with too much ease to give pleasure in the chase, whatever we needed for luxurious subsistence. The passage of creeks and brooks across the prairies is marked, to the utmost extent of vision, by a fringe of wood and countless flowering shrubs. Sometimes we ascended an elevation of some height, swelling gently from the plain. Here the eye traces, as on an immense map, the formation and gradual enlargement of these rivulets, and sees them curving their meandering lines to a point of union with another of the same kind. The broadened fringe of wood indicates the enlargement of the stream, and the eye takes in at one glance the gradual formation of rivers. The night brought us up on the edge of one of these streams. Our beasts are turned loose to stretch themselves on the short and tender grass, to feed and repose. The riders collect round a fire in the centre. Supper is prepared with bread, coffee, and the tenderest parts of the buffalo, venison, and other game. The appetite, sharpened by exercise on horseback, and by the salubrious air, is devouring. The story circulates. Past adventures are recounted, and if they receive something of the colouring of romance, it may be traced to feelings that grow out of the occasion. The projects and the mode of journeying on the morrow are discussed and settled. The fire flickers in the midst. The wild horses neigh, and the prairie wolves howl, in the distance. Except the weather threatens storm, the tents are not pitched. The temperature of the night air is both salutary and delightful. The blankets are spread upon the tender grass, and under a canopy of the softest blue, decked with all the visible lights of the sky. The party sink to a repose, which the exercise of the preceding day renders as unbroken and dreamless, as that of a grave. I awoke more than once unconscious that a moment had elapsed, between the time of my lying down and my rising.

"The day before we came in view of the Rocky Mountains, I saw in the greatest perfection that impressive, and, to me, almost sublime spectacle, an immense drove of wild horses, for a long time hovering round our path across the prairie. I had often seen great numbers of them before, mixed with other animals, apparently quiet, and grazing like the rest. Here there were thousands unmixed, unemployed; their motions, if such a comparison might be allowed, as darting and as wild as those of humming-birds on the flowers. The tremendous snorts with which the front columns of the phalanx made known their approach to us, seemed to be their wild and energetic way of expressing their pity and disdain for the servile lot of our horses, of which they appeared to be taking a survey. They were of all colours, mixed, spotted, and diversified with every hue, from the brightest white to clear and shining black; and of every form and structure, from the long and slender racer, to those of firmer limbs and heavier mould; and of all ages, from the curvetting colt to the range of patriarchal steeds, drawn up in a line, and holding their high heads for a survey of us, in the rear. Sometimes they curved their necks, and made no more progress than just enough to keep pace with our advance. Then there was a kind of slow and walking minuet, in which they performed various evolutions with the precision of the figures of a country dance. Then a rapid movement shifted the front to the rear. But still, in all their evolutions and movements, like the flight of sea-fowl, their lines were regular, and free from all indications of confusion. At times a spontaneous and sudden movement towards us, almost inspired the apprehension of an united attack upon us. After a moment's advance, a snort and a rapid retrograde movement seemed to testify their proud estimate of their wild independence. The infinite variety of their rapid movements, their tamperings, and manœuvres, were of such a wild and almost terrific character, that it required but a moderate stretch of fancy to suppose them the genii of these grassy plains. At one period they were formed for an immense depth in front of us. A wheel, executed almost with the rapidity of thought, presented them hovering on our flanks. Then, again, the cloud of dust that enveloped their movements, cleared away, and presented them in our rear. They evidently operated as a great annoyance to the horses and mules of our cavalcade. The frighted movements, the increased indications of fatigue, sufficiently evidenced, with their frequent neighings, what unpleasant neighbours they considered their wild compatriots to be. So much did our horses appear to suffer from fatigue and terror in consequence of their vicinity, that we were thinking of some way in which to drive them off; when on a sudden a patient and laborious donkey of the establishment, who appeared to have regarded all their movements with philosophic indifference, pricked up his long ears, and gave a loud and most sonorous bray from his vocal shells. Instantly this prodigious multitude, and there were thousands of them, took what the Spanish call the "stompado." With a trampling like the noise of thunder, or still more like that of an earthquake, a noise that was absolutely appal-

ling, they took to their heels, and were all in a few moments invisible in the verdant depths of the plains, and we saw them no more.

"It was in the first opening of spring, after a slow and easy journey of five weeks from Natchitoches, that we arrived at last in view of that immense chain of mountains, commonly denominated "the Rocky Mountains," at the point where the Arkansas finds its way from among them to the plain. No time will erase from my mind the impressions of awe and grandeur, excited by the distant view and the gradual approach to this sublime chain of mountains. We had been prepared for this impression by an approach of two hundred leagues, through a level plain of short and soft grass, seldom able to discover in our whole horizon, a tree, a shrub, an eminence, or any other object but herds of animals, to diversify the scene."

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"I arose early in the morning to make the circuit of this lovely vale. At the extremity of the village, the torrent, whose sources were in the mountains, poured down, from a prodigious elevation, a white and perpendicular cascade, which seemed a sheet suspended in the air. It falls into a circular basin, paved with blue limestone of some rods in circuit. The dash near at hand has a startling effect upon the ear. But at a little distance, it is just the murmur to inspire repose, and it spreads a delicious coolness all around the place. From the basin the stream seems to partake of the repose of the valley; for it broadens into a transparent and quiet water, whose banks are fringed with pawpaw, persimon, laurel, and catalpa shrubs and trees, interlaced with vines, under which the green carpet is rendered gay with flowers of every scent and hue. The soil is black, tender and exuberantly fertile. The coolness of the vale and the shade, together with the irrigation of the stream, cover the whole valley with a vivid verdure. The beautiful red-bird with its crimson-tufted crest, and the nightingale sparrow, pouring from a body scarcely larger than an acorn, a continued stream of sound, a prolonged, plaintive, and sweetly modulated harmony, that might be heard at the distance of half a mile, had commenced their morning voluntary. The mocking-bird, the buffoon of songsters, was parodying the songs of all the rest. Its short and jerking notes, at times, imitated bursts of laughter. Sometimes, laying aside its habitual levity, it shows, that it knows the notes of seriousness, and trills a sweetly melancholy strain. Above the summits of these frowning mountains, that mortal foot had never yet trodden, soared the mountain eagle, drinking the sunbeam in the pride of his native independence. Other birds of prey, apparently poised on their wings, swam slowly round in easy curves, and seemed to look with delight upon the green spot embosomed in the mountains. They sailed back and forwards, as though they could not tire of the view. The sun, which had burnished all the tops of the mountains with gold, and here and there glistened on banks of snow, would not shine into the valley, until he had almost gained his meridian height. The natives, fleet as the deer when on expeditions abroad, and at home lazy and yawning, were just issuing from their cabins, and stretching their limbs supinely in the cool of the morning. The smoke of their cabin fires had begun to undulate and whiten in horizontal pillars athwart the valley. The distant roar of the cascade, like the gong in Chinese music, seemed to mingle and harmonize all other sounds in the valley. It was a charming assemblage of strong contrasts, rocky and inaccessible mountains, the deep and incessant roar of the stream, a valley that seemed to sleep between these impregnable ramparts of nature, a little region of landscape surrounded by black and ragged cliffs, on every side dotted thick with brilliant and beautiful vegetation, and fragrant with hundreds of acacias and catalpas in full flower, a spot sequestered like a lonely isle in the midst of the ocean; in the midst of it a busy, simple, and undescribed people, whose forefathers had been born and had died here for uncounted generations: a people, who could record wars, loves, and all the changes of fortune, if they had had their historian. Such was the valley of the Commanches."

DEER HUNTING IN SOUTH CAROLINA.

Our Deer hunting commences on the 1st of August, and usually terminates about the 1st of November, when we commence fox hunting. Our party, generally, consists of that veteran and accomplished sportsman, Major T——, Captain B. F. T——, Messrs. J. R——, J. W——, and Colonel H——; and our pack, of ten couple of first rate dogs. Having but few Deer on our side of the river, we usually hunt eight or ten miles on the other side. Various causes delayed our sport this season until the 12th of September, on which day our party rendezvoused at Platt's Springs. In the afternoon of the same day, three couple of stanch dogs were thrown into cover at Muller's Drive. The sonorous tongue of Kate, and the deep challenge of old Clinker, soon announced the presence of game.

After an intricate drag of more than a mile, a burst, and then the clear, loud, and protracted halloo, from our driver, indicated that the game had been roused, and was taking the proper direction. In breaking from cover, the

game, (a doe and fawn,) separated. The former attempted to pass the stand occupied by Mr. R., and presented herself within thirty yards of him. He fired one barrel, and, (wonderful to relate,) missed her. Making thence to the stand filled by Colonel H., she rushed out at too great a distance, (at least one hundred yards,) to render his shot certain; but near enough to draw one barrel from him also. The fawn, followed by a part of the pack, passed out of the drive, at a point unoccupied; but too near our veteran, Major T., to have any chance of escape. Hastily mounting old Billy, into whose sides he dashed the rowels, he headed the pack and killed the fawn.

As we occupied an untenanted house, and had brought our own supplies, the fawn afforded a very seasonable addition to our larder; and in the hands of our scientific cook, Paul, was served up in magnificent style. The next morning, at sunrise, having been joined by Colonel A. and Mr. M., the whole pack were uncoupled, and thrown off at the Big Marsh. Deep in the swamp, old Clinker again challenges, and the whole pack rush to his well known tongue; a short drag, and then, what a tremendous burst! A large buck was viewed at Hart's stand; but, smelling the stander, he dashed into the swamp, where, making one or two circles, he broke across the creek, eluding all the party.

In about an hour our boys returned with all the dogs, having succeeded in whipping them off. They were then thrown into Red Bank, where two or three starts were made; but no shooting until we reached Rocky Ford, where a fine doe was killed by Colonel H. Returning to dinner, each *faux pas* was dwelt upon; and the unfortunate subjects that committed them were reprimanded by our veteran in the true spirit of a practised sportsman. The merits of each dog was commented upon over our venison pastry, with its concomitants; which you may more easily imagine than I describe. After "cooling off," we again turned out, up the Big Creek. Five Deer were soon roused, one of which was shot by Mr. B., and another by Mr. M.; but the principal part of the dogs following the remaining three to the hills, we pursued until dusk, but were unable to shoot again. The next morning, having as much venison as we could dispose of amongst our friends, we returned home.

Our last hunt occurred about three weeks since. Having been invited to join some friends, in the neighbourhood of Lexington court-house, to hunt "a tremendous buck," who had frequently eluded their pursuit, we all assembled at the house of Mr. D. Early the next morning the party divided, to flank Twelve Mile Creek, leaving the big buck for the afternoon. So soon as the light blast of our horn was answered by the opposite party, our dogs were uncoupled and thrown into cover—Blue Cap challenged. Two bucks speedily broke cover, for the hills. Being hard pressed by the dogs, they doubled for the mill pond. Soon after they separated, the whole pack adhering to the larger, (a four snagged buck,) who was headed and killed by Colonel H. After a short delay, the dogs were thrown off again in the swamp. A doe soon roused, and, in breaking cover, was killed by Mr. D., our worthy host. The party now formed a junction, and found that Mr. B. F. T. and Mr. W. had killed another fine buck, which they had caught sneaking from cover. Returning to Mr. D.'s, we were, after dinner, prevailed on, ("nothing loth,") to make one more drive for the "big one." Mr. F., (an amateur,) volunteered to drive; and, aided by Mr. D. and the boys, the dogs were turned into cover, close to our rendezvous. At it they went, in gallant style; Clinker, Blue Cap, Jasper, Ebony, and Boxer, soon challenged—a short drag was the prelude of a tremendous crash. The old fellow attempted his old tricks of doubling like a fox, and effectually deceived Mr. F., who raised the view halloo; but, being cautioned by Mr. D. to stand fast, we all remained at our posts, whilst the whole pack settled down upon him, close at his haunches. In a short time Mr. F. discovered his mistake, by viewing the "old Monarch," accompanied by another buck. He fired from a restive horse—hit the old one with a single shot in the thigh. The Deer then separated. The principal part of the pack, after the wounded one, making directly to Mr. D., who shot at, but missed him. He then turned to Mr. R.'s stand, who, with one barrel, sealed his fate.

Boxer, Buncomb, Ebony, and Sting, pursued the other buck; and, in less than an hour and a half, ran into him at a mill pond, where he was taken from them by the miller, having never been fired at. Thus closed this brilliant hunt, *killing every Deer unharboured;* and the highest encomiums were elicited from "our veteran," who was almost tempted to challenge, to hunt his party and their dogs against the universe.

[*American Turf Register.*

THE MELON.

The Melon is the richest and most highly flavoured of all the fleshy fruits. It is often said to be a native of the central parts of Asia, and to have been first brought into Europe from Persia; but the date of its first culture is so remote, that there is no certain knowledge on the subject. Pliny and Columella describe the fondness of

the Emperor Tiberius for Melons, and detail the contrivances by which they were procured for him at all seasons. Stoves appear to have been used in this process; so that forcing-houses were not unknown to the Romans. The Melon has certainly been generally cultivated in England since about the middle of the sixteenth century; how much earlier is not known. It is highly probable that those ecclesiastics who paid such attention to the other fruits grown in Italy and France, would not neglect one so delicious as the Melon; and it is distinctly said by a writer on British Topography, Gough, that the cultivation of the Melon in England preceded the wars of York and Lancaster, but that it was destroyed in the times of civil trouble that succeeded. It is probable, however, that the Melon was confounded with the pumpkin by the earlier writers whom Gough consulted. While in France, and in England, Melons are grown as an article of luxury, in some parts of the east they are used as a chief necessary of life. Niebuhr, the celebrated traveller, says, "Of pumpkins and Melons, several sorts grow naturally in the woods, and serve for feeding camels; but the proper Melons are planted in the fields, where a great variety of them is to be found, and in such abundance, that the Arabians of all ranks use them, for some part of the year, as their principal article of food. They afford a very agreeable liquor. When its fruit is nearly ripe, a hole is pierced into the pulp; this hole is then stopped with wax, and the Melon left upon the stalk. Within a few days the pulp is, in consequence of this process, converted into a delicious liquor." Mr. Southey has alluded to this circumstance in the following passage:—

> "Whither is gone the boy?
> He had pierced the Melon's pulp,
> And clothed with wax the wound;
> And he had duly gone at morn
> And watched its ripening rind;
> And now all joyfully he brings
> The treasure, now matured."*

Although the Melon is a very delicious fruit, it is not one of the most wholesome; more especially in cold climates, where, if eaten in any considerable quantity, it is apt to derange the stomach, unless corrected by warm and stimulating ingredients; and the same remark may be applied to the cucumber.

Small Melons are, when equally ripe, more highly flavoured than large ones. In general, however, the fruit is chosen as much for show as for use, and thus the large ones are preferred. Indeed, in almost all the cultivated fruits and vegetables, quality is very apt to be sacrificed to appearance; as in the markets the articles are bought by the judgment of the eye, and not by that of the palate. To obtain the large size, a ranker manuring, and higher culture, must be resorted to than are altogether consistent with the natural development of the juices of the plant.

Of the Melon there are many varieties, and the number of them is constantly increasing. The Cantaloupe is one of the best. It obtains its name from a seat belonging to the Pope, not far from Rome, where it was probably first cultivated in Europe, and whence it has spread into most countries. The Cantaloupe is of a middling size, nearly round in form, and remarkably rough and irregular in the surface. The colours, both of the surface and the flesh, vary—the former from orange mottled with green, to green mottled with black; and the latter from white, or nearly so, to orange tinged with rose colour. The flesh of some varieties is greenish, but these are inferior to the others. When Melons of this sort are equally ripened, it may be considered as a general rule, that those which are darkest on the outside, most richly tinted in the flesh, and of a moderate size, have the most high and musky flavour.

There is also a small African or Egyptian Melon, the flesh of which is green, of particular excellence. Frederick the Great was passionately fond of these Melons; and Zimmerman, who attended him in his last illness, finding him very ill from indigestion, discovered that he ate three or four of them daily for breakfast. On remonstrating with the king, the only answer that the physician could get was, that the king would send him some of the fruit to taste the next day—as if its excellence would be a sufficient apology for the habitual indiscretion.*

The Romana is also a fine Melon; and it ripens earlier than the Cantaloupe. The surface is often netted. It is of an oval shape, highly flavoured, and when good, very heavy and solid.

The Salonica, which has been but recently introduced into this country, is a beautiful Melon. It is spherical, smooth, and of a fine golden colour. The flesh is white, very sweet, and in consistency resembling the Water-Melon. The Salonica preserves its qualities, though it is very large; and with good culture specimens may be had weighing seven or eight pounds.

The small Portugal is a very early and productive Melon, but not remarkable for flavour. The Rock-Melons are thickly set with knobs; they are of various colours, and some of them of very fine flavour. The oblong ribbed

* Thalaba, book ii.

* Zimmerman's Conversations with the King of Prussia.

is marked into segments from the root to the crown; it is very productive; and the flavour is so high, that it is sometimes called, by way of eminence, the Musk-Melon.

The Melons of Persia have long borne a high character. "Persia," says Malte Brun, writing after Chardin, Olivier, and Langles, "is consoled for the occasional failure of her grain crop, by the fineness of her fruits. There are twenty sorts of Melons—the finest in Khorassan. In Persia, this fruit is extremely succulent, and contributes greatly to health: they are sometimes so large that three or four are a full load for a man."

The Persian Melons are extremely rich and sweet; and instead of the thick rind of the common Melons, they have a very thin and delicate skin, which makes a fruit of the same apparent size contain nearly twice as much edible matter. In addition to this, the Melons are beautiful, and they bear abundantly; and in the warm climate of Persia, the only attention which they ask from the cultivator, is to be regularly watered.—*Lib. Ent. Know.*

ANECDOTE OF A NEWFOUNDLAND DOG.

From a child I had "a passion" for the very name of a Newfoundland Dog. Their beauty and their strength, fidelity and sagacity, had been deeply impressed upon my imagination by many a story and surprising anecdote; and my determination to have one *some day* was kept alive by occasional glimpses of these beautiful animals in the streets of the city. Many were the obstacles to prevent my wish; but at length, in spite of dog laws and other difficulties, I could call a Newfoundland Dog my own. Poor fellow! that thy noble spirit should pine, and thy fine form be "cabined, cribbed, confined," in a little yard of eight by ten! But no matter—a smaller limit is enclosure ample for thee now! Peace to thy unmarked grave.

My time was too much occupied with business to devote to the (doubtful) pleasure of properly educating my canine jewel, and he therefore improved but slowly in my keeping. He was a substantial six months' old pup when I got him, had been brought up in the country, and answered to a name that did not answer me; so I christened him anew, with something more poetical, though, I confess, that for a long time, (except when the sound of the new name was accompanied by the display of a piece of meat,) his ear was so unmusical as to prefer his old and homely name. I taught him to fetch and carry, and to seek whatever was intentionally hid for him; he showed some genius for discovery, but I have nothing wonderful to relate about him on this score. As soon as the mild weather would allow us to call it spring, I took him with me to the Schuylkill, anxious for a display of his aquatic exercises. I threw in chips, but though he would bring them from the shore, none looked tempting enough to lure him into the water. I suppose his country habitation must have been entirely *inland*, and this was, I suppose, his first view of, as I had hoped, his other *native* element. But I was determined, in spite of his antipathy, that he should swim; so, after all manner of persuasion was exhausted, I used coercion, struggled and wrestled, and, solid as he was, turned him into the liquid fairly off the wharf! But such a swimmer! he did not move like a master of the element; no, if it had been flame he could not have struggled more earnestly or awkwardly to escape from it. So piteous a face, and nose directly up, and fore-feet out of water, paddling away for dear life! But at length he worked his passage to the shore, and bounded off, determined to avoid another bath for that day. And, indeed, whenever I afterward attempted it, I had to secure him before we approached the water, and drag and carry him when it came in view. One day, after one of his unwilling immersions, he was frolicking round me at a respectful distance, as I was lying on the bank of the basin at Chesnut street and Schuylkill, when a gentleman approached with a Dog of the same species, threw a chip into the water, which was immediately plunged for by his Dog, who brought it out and returned, swimming round, delighting in the water. The moment my Dog observed him, he left his gambols and approached, regarding the movements of the Dog in the water intently, during the time he remained. As soon as he left, he walked round to the side of the basin opposite to me, and deliberately, of his own accord, plunged in and swam round confidently and gracefully, nothing but his head above the water, and his chops resting on it. He had taken one good lesson in swimming by the observation of his fellow, and immediately put it in practice; and he always swam in the same manner afterward. H.

PRESERVATION OF IRON FROM RUST.

A mastic or covering for this purpose, proposed by M. Zeni, and sanctioned by the Societé d'Encouragement, is as follows: eighty parts of pounded brick, passed through a silk sieve, are mixed with twenty parts of litharge; the whole is then rubbed up by the muller with linseed oil, so as to form a thick paint, which may be diluted with spirits of turpentine; before it is applied the iron should be well cleaned.

From an experience of two years, upon locks exposed

to the air, and watered daily with salt water, after being covered with two coats of this mastic, the good effects of it have been thoroughly proved.

[*Bull. d'Encour. Jan.* 1830.

SOUND THE HORN.

A Hunting Carol.

By C. W. Thomson.

Sound the horn—sound the horn,
O merrily dawns the day,
The birds awake with the rosy morn,
To the chase—to the chase away.
Hark from the hill, the bugle is swelling,
Hark from their kennel, the hounds are yelling,
The steeds are neighing aloud from their stall,
Awake, arise ere the sunbeams fall.
Mount, mount, thro' forest, o'er vale and hill,
Follow the sound of the bugle still,
Follow, follow still.
Ere yet from the mountain has gleamed the day,
To the chase—to the chase away.

Sound the horn—sound the horn,
O gaily the hunters meet,
Each on his prancing courser borne,
For the chase—for the chase they greet;
Come, for the morning is on the mountain,
Come, for the deer is at the fountain,
The mists are melting away in the air,
There's not a moment of day to spare.
On—on—the stag must yet be slain,
Strike the spur and slacken the rein,
Slacken the courser's rein—
The notes of the bugle unceasingly play,
To the chase—to the chase away.

Sound the horn—sound the horn,
O swiftly flies the deer,
Torrent and steep alike they scorn,
For the prize—for the prize is near.
See, the strength of the stag is waning,
See, the hounds on his track are gaining;
Swiftly he flies thro' valley and wood,
By horse, and huntsman, and horn pursued.
Speed—speed—ere noon has seen the sun,
The prey must be caught—the game be won—
The noble game be won.
Then heed not the river, and spurn the spray.
To the chase—to the chase away.

From the Library of Useful Knowledge.

THE VICES AND DISAGREEABLE OR DANGEROUS HABITS OF THE HORSE.

(*Continued from page* 216.)

KICKING IN HARNESS.

A much more serious vice is kicking in harness. From the least annoyance about the rump or quarters, some Horses will kick at the most violent rate, and destroy the bottom of the chaise, and endanger the limbs of the driver. Those that are fidgetty in the stable are most apt to do this. If the reins should perchance get under the tail, the violence of the kicker will be most outrageous; and while the animal presses down his tail so tightly that it is almost impossible to extricate the reins, he continues to plunge until he has demolished every thing behind him.

This is a vice standing foremost in point of danger, and which no treatment will often conquer. It will be altogether in vain to try coercion here. If the shafts are very strong and without flaw, or if they are plated with iron underneath, and a stout kicking strap used, which will barely allow the Horse the proper use of his hind limbs in progression, but not permit him to raise them sufficiently for the purpose of kicking, he may be prevented from doing mischief; or if he is harnessed to a heavy cart, and thus confined, his efforts to lash out will be restrained: but it is a very unpleasant thing frequently to witness these attempts, although ineffectual, to demolish the vehicle; and the shafts or the kicking strap may possibly break, and extreme danger may ensue. A Horse that has once begun to kick, whatever may have been the original cause of it, can never be depended on again; and he will be very unwise who ventures behind him.

UNSTEADINESS WHILST BEING MOUNTED.

When this merely amounts to eagerness to start, (very unpleasant, indeed, at times, for many a rider has been thrown from his seat before he was fairly fixed in it,) it may be remedied by an active and good horseman. We have known many instances in which, while the elderly, and inactive, and fearful man, has been making more than one ineffectual attempt to vault into the saddle, the Horse has been dancing about to his annoyance and danger; but the animal had no sooner been transferred to the management of a younger and more agile rider, than he became perfectly subdued. Severity will here, more decidedly than in any other case, do harm. The rider should be

fearless; he should carelessly and confidently approach the Horse, mount at the first effort, and then restrain him for a while patting him, and not suffering him to proceed until he becomes perfectly quiet. These Horses should not be too highly fed, and should daily have sufficient exercise.

When the difficulty of mounting arises not from eagerness to start, but unwillingness to be ridden, the sooner such Horse is disposed of the better. He may be conquered by a determined rider, but a skilful and determined horseman alone will manage him; and even he will not succeed without frequent and even dangerous contests that will mar all the pleasure of the ride.

REARING.

This sometimes results from playfulness, carried indeed to an unpleasant and dangerous extent; but it is oftener a vice, and is a desperate and frequently successful effort to unhorse the rider. The Horse that has twice decidedly and dangerously reared, should never be trusted again, unless indeed it be the fault of the rider—unless he has been using a deep curb and sharp bit. Some of the best Horses will contend against these, and then rearing may be immediately and permanently cured by using a snaffle bridle alone.

The horse-breaker's remedy, that of pulling the Horse backward on a soft piece of ground, is worthy of him, and would be practised only by reckless and brutal men. Many Horses have been injured in the spine, and others have broken their necks, by being thus suddenly brought over; while even the horse-breaker, who fears no danger, is not always able to extricate himself from the falling Horse. If rearing proceeds from vice, and is unprovoked by the bruising and laceration of the mouth, it fully partakes of the inveteracy which attends the other divisions of restiveness.

RUNNING AWAY.

Some headstrong Horses will occasionally endeavour to bolt with the best rider. Others, with their wonted sagacity, endeavour thus to dislodge the timid or unskilful. Some are hard to hold, or bolt only during the excitement of the chase; others will run away, prompted by a vicious propensity alone. There is no cure here. That method which affords any probability of success, is to ride such a Horse with a strong curb and sharp bit; to have him always firmly in hand; and if he will run away, and the place will admit of it, to give him, (sparing neither curb, whip, nor spur,) a great deal more running than he likes.

O o o

VICIOUS TO CLEAN.

It would scarcely be believed to what an extent this exists in some Horses, that are otherwise perfectly quiet. It is only at great hazard that they can be cleaned at all. The origin of this is probably some maltreatment. There is a great difference in the sensibility of the skin in different Horses. Some seem as if they could scarcely be made to feel the whip; others cannot bear a fly to alight on them without an expression of annoyance. In young Horses the skin is peculiarly delicate. If they have been curried with a broken comb, or hardly rubbed with an uneven brush, the recollection of the torture they have felt makes them impatient, and even vicious, during every succeeding operation of the kind. Many grooms, likewise, seem to delight in producing these exhibitions of uneasiness and vice; although when they are carried a little too far, and to the hazard of the limbs of the groom, the animals that have been almost tutored into these expressions of irritation, are brutally kicked and punished.

This, however, is a vice which may be conquered. If the animal be dressed with a lighter hand, and whisped rather than brushed, and the places where the skin is most sensitive be avoided as much as thorough cleanliness will allow, the Horse will gradually lose the recollection of former ill-treatment, and become tractable and quiet.

VICIOUS TO SHOE.

The correction of this is more peculiarly the business of the smith; yet the master should diligently concern himself with it, for it is oftener the consequence of injudicious or bad usage than of natural vice. It may be expected that there will be some difficulty in shoeing a young Horse for the first few times. It is an operation which gives him a little uneasiness. The man to whom he is most accustomed should go with him to the forge; and if another and steady Horse were shod before him, he might be induced more readily to submit. We cannot deny, that after the habit of resisting this necessary operation is formed, force may sometimes be necessary to reduce our rebellious servant to obedience; but we affirm, that the majority of Horses *vicious to shoe* are rendered so by harsh usage, and by the pain of correction being added to the uneasiness of shoeing. It should be a rule in every forge that no smith should be permitted to strike a Horse, much less to twitch or to gag him, without the master-farrier's order; and that a young Horse should never be twitched or struck. There are few Horses that may not be gradually rendered manageable for this purpose by mildness and firmness in the operator. They will soon understand

that no harm is meant, and they will not depart from their usual habit of obedience; but if the remembrance of corporal punishment is connected with shoeing, they will always be fidgetty, if not dangerous.

This is a very serious vice, for it not only exposes the animal to occasional severe injury from his own struggles, but also from the correction of the irritated smith, whose limbs, and even whose life being in jeopardy, may be forgiven if he is sometimes a little too hard-handed. Such a Horse is very liable, and without any fault of the smith, to be pricked and lamed in shoeing; and if the habit should be confirmed, and should increase, and it at length becomes necessary to cast him, or to put him in the trevis, the owner may be assured that many years will not pass ere some formidable and even fatal accident will take place. If, therefore, mild treatment will not correct the vice, the Horse cannot be too soon got rid of.

Horses have many unpleasant habits in the stable and the road, which cannot be said to amount to *vice*, but which materially lessen their value.

SWALLOWING WITHOUT GRINDING.

Some greedy Horses swallow their corn without properly grinding it, and the power of digestion not being adequate to the dissolving of the husk, no nutriment is extracted, and the oats are voided whole. This is particularly the case when Horses of unequal appetite feed from the same manger. The greedy one, in his eagerness to get more than his share, bolts a portion of his corn whole. If the farmer can, without considerable inconvenience, so manage it that every Horse shall have his separate division of the manger, the Horse of smaller appetite and slower feed would have the opportunity of grinding at his leisure, without the fear of his share being stolen from him by his neighbour.

Some Horses, however, are naturally greedy feeders, and will not, even when alone, allow themselves time to chew or grind the corn. In consequence of this, they carry but little flesh; they are not equal to severe work; and, if their rack has been supplied with hay when the corn was put into the manger, their stomachs will become distended with half-chewed and indigestible food; they will be incapable of exertion for a long time after feeding, and, occasionally, dangerous symptoms of staggers will occur. The remedy is, not to let such Horses fast too long. The nose-bag should be the companion of every considerable journey. The food should likewise be of such a nature that it cannot be easily bolted. Chaff should be plentifully mixed with the corn, and in some cases, and especially in Horses of slow work, should, with the corn, constitute the whole of the food. Of this we shall treat more largely under the article "Feeding."

In every case of this kind the teeth should be very carefully examined. Some of them may be unduly lengthened, particularly the first of the grinders; or they may be ragged at the edges, and may scratch and wound the cheek. In the first case the Horse cannot properly masticate his food; in the latter he will not: for these animals, as too often happens in sore throat, would rather starve than put themselves to much pain.

CRIB-BITING.

This is a very unpleasant habit, and a considerable defect, although not so serious a one as some have represented. The Horse lays hold of the manger with his teeth, violently extends his neck, and then, after some convulsive action of the throat, a slight grunting is heard, accompanied by an apparent sucking or drawing in the air. Whether, however, air is actually drawn in, and thus the Horse becomes more subject to colic than one without this trick, or whether a portion of air is expelled, showing the previous existence of flatulence and a disposition to colic, are points that have not been settled among the veterinarians.

The Horse is evidently making the edge of the manger a fixed point, by means of which he may overcome that obstacle which the formation of the soft palate and the back part of the mouth, would present to either the expulsion or drawing in of the air, if accomplished through the medium of the mouth. When we consider, however, that any air expelled from the stomach might easily find a passage through the nostril, without the action of crib-biting; while it would be difficult or impossible, without some alteration in the natural form and action of the parts at the back of the mouth, and particularly the depression of the epiglottis or covering of the windpipe, to convey air to the stomach, we are inclined to conclude, that this fixed point is used to enable the animal to accomplish this alteration, and suck up and convey a portion of air into the stomach.

The effect of crib-biting is plain enough. The teeth are injured and worn away, and that, in an old Horse, to a very serious degree; a considerable quantity of corn is often lost, for the Horse will frequently crib with his mouth full of corn, the greater part of which will fall over the edge of the manger; and much saliva flows out while the manger is thus forcibly held, the loss of which must be of serious detriment, as impairing the digestion. The crib-biting Horse is notoriously more subject to colic than other Horses usually are, and to a species difficult

of treatment, and even dangerous. Although many a crib-biter is stout and strong, and capable of all ordinary work, these Horses do not generally carry much flesh, and have not the endurance of others. On these accounts, crib-biting has very properly been decided to be unsoundness.

It is one of those tricks which are very contagious. Every companion of a crib-biter in the same stables is likely to acquire the habit, and it is the most inveterate of all habits. The edge of the manger will in vain be lined with iron, or with sheep-skin, or with sheep-skin covered with tar or aloes, or any other unpleasant substance. In defiance of the annoyance which these may occasion, the Horse will in a very short time again attack his manger. A strap buckled tightly round the neck, by compressing the windpipe, will prevent the possibility of this action; but the strap must be constantly worn, and its pressure is too apt to produce a worse affection, viz. an irritation in the windpipe, which terminates in roaring.

Some have recommended turning out for five or six months, but this has never succeeded except with a young Horse, and then rarely. The old crib-biter will employ the gate for the same purpose as the edge of his manger, and we have seen him gallop across a field for the mere object of having a gripe at a rail. Medicine will be altogether thrown away in this case.

The only remedy is a muzzle, with bars across the bottom, sufficiently wide to enable the animal to pick up his corn and pull his hay, but not to grasp the edge of the manger. If this be worn a very long time, the Horse may be tired of attempting that which he cannot accomplish, and may possibly for a while forget the habit; but in the majority of cases the desire of crib-biting will return with the power of gratifying it.

The causes of crib-biting are various, and some of them beyond the control of the proprietor of the Horse. We have said that it is often the result of imitation; but it is more frequently the consequence of idleness. The high-fed and spirited Horse must be in mischief, if he is not usefully employed. Sometimes, but we believe not often, it is produced by partial starvation, whether in a bad straw-yard, or from unpalatable food. An occasional cause of crib-biting is the frequent custom of grooms, even when the weather is not severe, of dressing them in the stable. The Horse either catches at the edge of the manger, or at the edge of the partition on each side, if he has been turned, and thus he forms the habit of laying hold of these substances on every occasion.

(*To be continued.*)

THE COMING OF WINTER.

We are in a season of darkness, storms, and mists; of the whirling away of the withered leaves, and the introduction of complete winter. Rain, hail, and wind, chase each other over the fields, and amongst the woods in rapid alternations. The flowers are gone; the long grass stands amongst the woodland thickets withered, bleached, and sere; the fern is red and shrivelled amongst the green gorse and broom; the plants, which waved their broad, white umbels to the summer breeze, like skeleton-trophies of death, rattle their dry and hollow kexes to the autumnal winds. The brooks are brimful; the rivers turbid, and covered with masses of foam, hurry on in angry strength, or pour their waters over the champain. Our very gardens are sad, damp, and desolate. Their floral splendours are dead; naked stems and decaying leaves have taken the place of verdure. The walks are unkempt and uninviting; and as these summer friends of ours are no longer affluent and of flourishing estate, we, of course, desert them.

The return of winter is pleasurable even in its severity. The first snows that come dancing down; the first frost that rimes the hedges, variegates the windows, or shoots its fine, long crystals across the smallest puddle, or the widest sheet of water, bring with them the remembrance of our boyish pleasures, our slidings and skatings—our snow-ballings and snow-rolling—our snow-man making—the wonders of hoar-frosts—of nightly snow-drifts in hollow lanes—of caves and houses, scooped in the wintry heaps with much labour and delight; and of scampering over hedge and ditch on the frozen snow, that "crunched beneath the tread," but broke not.

The dark, wet, and wintry days, and the long dismal nights of this season, are, however, favourable to fireside enjoyments and occupations. Driven from the fields and woods, where we have found so much delight, so many objects of interest, or employment, we may now sit within and hear the storm rage around, conscious that the fruits of the earth are secured, and that, like the bees in their hives, we have not let the summer escape, but have laid up stores of sweetness for the time of darkness and dearth. In large farm-houses, many useful avocations may enliven the evening fireside; and it is now become a laudable custom in many superior farms, to encourage reading and other means of mental improvement, which the continual engagements of a rural labourer preclude during the summer. The cottager may usefully, by his winter fire, construct bee-hives, nets, mole-traps, bird-cages, ect.; with any of these employments I have more sympathy than with the last, however.

Of all men who pursue rural occupations, the bird-catch-

ers, especially the summer bird-catchers, they who do not capture birds when they have congregated in winter, when they have no mates or young ones to feel the effects of their loss, and are ready for the table of the epicure, but who take only singing birds, and take them too wherever and whenever they can, without regard to their having young, which may perish by their absence, or to that harsh change, from the full enjoyment of summer sunshine and pleasures to the captivity of the cage. When I see their nets spread in the fields where birds resort, I wish them all manner of villainous ill-luck; and I never omit a favourable opportunity of deranging or destroying their snares when they fall in my way.

There are none of our customs which more mark our selfishness than that of keeping singing birds in perpetual confinement, making the pleasure of our ears their misfortune; and that sweet gift, which God has given them, wherewith to make themselves happy, and the country delightful, the curse of their lives. If we were contented, however, with taking and rearing young ones, which never knew the actual blessing of liberty, or of propagating them in cages or avaries, the evil would not be so enormous. But the practice of seizing singing birds, which have always enjoyed the freedom of the earth and air, in summer when they are busy with the pleasant cares of their nests or young broods, and subjecting them to a close prison, is detestable—doubly detestable in the case of *migratory* birds, which have not merely the common love of liberty, but the instinct of migration to struggle with. To behold a bird which God has created to fly from land to land to crown the pleasantness of spring with the most delicious music, or which he has made to soar, in the rapture of its heart, up to heaven's gates, "cribbed, cabined, and confined" in a narrow cage by man, is one of the most melancholy objects on earth. Let those who have hearts for it keep them, and listen to them with what pleasure they may; for my part, while I am myself sensible of the charms of freedom, and of the delights of the summer fields, I shall continue to prefer the "wood notes wild" of liberty to a captive's wail.—*Book of Seasons.*

EARLY AWAKENING OF BIRDS.

At one period of my life, being an early waker and riser, my attention was frequently drawn "to songs of earliest birds;" and I always observed that these creatures appeared abroad at very different periods as the light advanced. The rook is perhaps the first to salute the opening morn; but this bird seems rather to rest than to sleep. Always vigilant, the least alarm after retirement rouses instantly the whole assemblage, not successively, but collectively. It is appointed to be a ready mover. Its principal food is worms, which feed and crawl upon the humid surface of the ground in the dusk, and retire before the light of day; and, roosting higher than other birds, the first rays of the sun, as they peep from the horizon, become visible to it. The restless, inquisitive robin now is seen too. This is the last bird that retires in the evening, being frequently flitting about when the owl and bat are visible, and awakes so soon in the morning, that little rest seems required by it. Its fine large eyes are fitted to receive all, even the weakest rays of light that appear. The worm is its food too, and few that move upon the surface escape its notice. The cheerful melody of the wren is the next we hear, as it bustles from its ivied roost; and we note its gratulation to the young-eyed day, when twilight almost hides the little minstrel from our sight. The sparrow roosts in holes, and under the eaves of the rick or shed, where the light does not so soon enter, and hence is rather a tardy mover; but it is always ready for food, and seems to listen to what is going forward. We see it now peeping from its penthouse, inquisitively surveying the land; and, should provision be obtainable, it immediately descends upon it without any scruple, and makes itself a welcome guest with all. It retires early to rest. The black-bird quits its leafy roost in the ivied ash; its "chink, chink," is heard in the hedge; and, mounting on some neighbouring oak, with mellow, sober voice, it gratulates the coming day. "The plain-song cuckoo gray" from some tall tree now tells its tale. The lark is in the air, the "martin twitters from her earth-built shed," all the choristers are tuning in the grove; and amid such tokens of awakening pleasure it becomes difficult to note priority of voice. These are the matin voices of the summer season: in winter a cheerless chirp, or a hungry twit, is all we hear; the families of voice are away, or silent; we have little to note, and perhaps as little inclination to observe.—*Jour. of a Naturalist.*

SINGULAR OCCURRENCE.

A few weeks since, as one of our sportsmen was out gunning, in the vicinity of this place, his dog started a woodcock, which he immediately fired at and hit, whilst flying rapidly with the wind; and such was the impetus it had acquired by the rapidity of its flight, that in descending in nearly a horizontal line to the earth, it struck a corn stalk, which was penetrated entirely through by its *bill*, by which it hung suspended to the corn stalk, and in which situation it was found by the gentleman who shot it.

[*Reading Chronicle.*

From Nature on Stone by J.G.Clinton.

GREY SQUIRREL.

THE GRAY SQUIRREL.

SCIURUS CAROLINENSIS.

(Plate XXI. Vol. 2.)

Sciurus Carolinensis et Cinereus; Gmel. Schreb. *tab.* 213. *Sciurus Carolinensis,* Godman. *Vol. 2. p.* 131. *Petit Gris:* Buff. 10. *pl.* 25. *encycl. pl.* 74. *fig.* 3. *Ecureuil gris de la Carolina;* Bosc. II. *p.* 96. *pl.* 29: F. Cuv. *Mam. Lithog. livr.* 11e. *Gray Squirrel:* Penn. *Arct. Zool.* I. 135. *Hist. Quad. No.* 272.—J. Doughty's Collection.

There are few animals better known in this country than the one under present notice, and, from the circumstance of their being introduced so frequently as pets in human habitations, our knowledge is acquired at a very early age. They are, however, so plentifully scattered over every part of the United States, that it is to be presumed, scarcely an individual can be found who is ignorant of the Gray Squirrel.

The pursuit of this animal has always been looked upon as a very inviting sport, and is entered into by both old and young, until age and eyesight in the former render the sport a burthen; and by the latter, so soon as the fowling-piece or rifle can be effectually wielded, and "dropping Squirrels" from the tallest trees, are the boasted exploits of each. On the mountains, and in the newly-settled districts of the country, this sport is very common; perhaps because these animals abound in greater numbers there. In destroying Squirrels some use the short gun, and others the rifle; the latter, however, is more commonly used, in consequence of the good practice the sport affords for the use of that instrument; the part usually aimed at is the head, and so accurate are practitioners in shooting the rifle, that seldom any other part of the animal is struck; sometimes, those who are superior in skill, show their dexterity in killing the animal, without striking it with the ball; this is called by the hunters "barking Squirrels," and is performed by striking the bark immediately under the Squirrel, which destroys life instantaneously, by the violence of the concussion thus effected.

To an inexperienced eye, the Squirrel, when lodged in the foliage of a tall tree, is a difficult object to discover, and when seen by such, they frequently are at a loss to determine whether the object seen is a Squirrel or not. These animals are not only shy, but most agile in their movements, and these qualities are increased accordingly as they become persecuted, to so great extent, that in passing from limb to limb of adjoining trees, they frequently elude the most active pursuit.

In districts where Squirrels abound, they may be seen at all hours, except the middle of the day; but in thickly inhabited neighbourhoods, where they are shot at and worried much, it requires great caution to discover them; the most propitious periods then, are from daylight to sunrise, and from sunset until dark. The approach of the huntsman at these times must be with much quietness and caution, and must be directed always to those trees which are their favourite resort for food, the chief of which is the shellbark. The keen eye of an experienced Squirrel hunter cannot always discover the object of his pursuit on the tall trees which grow in our forests, and is often obliged to determine the presence of these animals by the fragments gnawed from the nuts which lie scattered beneath the trees. Sometimes a dropping nut denotes a Squirrel nigh, if not on the tree of his immediate search. A falling nut may be heard through the still wood at a very considerable distance, and so soon as the sound reaches the ear of the hunter, he directs his footsteps to the spot whence the sound proceeded, with quiet stealth, and soon discovers the game eating its food on the topmost branches of the tree; sometimes the animal, warned of the approach of its enemy by the rustling leaves or the cracking twigs beneath his footsteps, seeks safety by escaping to its hole, or hides itself against some large limb of the same tree, or runs to the extremity of the top, and there remains motionless in supposed security amid the thickest collection of leaves. The eyes and ingenuity of the hunter are now employed to detect his prey; he looks with intensity into every limb and branch, but unable to discern the wary little animal, he tries other positions around the tree, until at length he sees a spot among the leaves of more density than other parts, or perhaps, on a limb, a small gray tuft, like moss or tow, and levelling his gun, he fires, and the falling Squirrel proves the unerring certainty of his judgment. It often happens, however, that a Squirrel cannot be discovered in these positions when in a quiescent state, and ingenuity is employed to excite motion, and this effected, no matter how trivial, will at once discover the position of the game. The means usually employed to do this, are the shaking of a small bush near or under the tree on which the animal is supposed to be lodged, or striking its trunk with violence.

In many parts where Squirrels are scarce, they are hunted with small dogs, trained for the purpose, which, so soon as a tree on which a Squirrel rests is discovered, signify it to their master by barking; and with a good dog of

this description a hunter will tree and shoot many Squirrels.

The food of the Gray Squirrel consists of hickory-nuts, chesnuts, beech-nuts, acorns, maize, Indian corn, and every other variety of cultivated grain; and it frequently requires the utmost vigilance of the husbandman to protect his interests from suffering materially by the frequent and destructive visits of these his unwelcome little neighbours. Pennant in his Zoology remarks, "that from January, 1749, to January, 1750, Pennsylvania paid eight thousand pounds currency; but on complaint being made by the deputies that their treasuries were exhausted by these rewards, they were reduced to' one-half, that is from three pence to a penny and a half." On the history of this Squirrel, and Squirrels in general, Dr. Godman says:

"The Gray Squirrel prefers the oak, hickory and chesnut woods, where it finds a copious supply of nuts and mast, of which it provides large hoards for the winter. Their nests are placed chiefly in tall oak-trees at the forks of the branches; these nests are very comfortable, being thickly covered and lined with dried leaves. During cold weather the Squirrels seldom leave these snug retreats, except for the purpose of visiting their store-houses, and obtaining a supply of provisions. It has been observed that the approach of uncommonly cold weather is foretold when these Squirrels are seen out in unusual numbers, gathering a larger stock of provisions, lest their magazines should fail. This, however, is not an infallible sign, at least in vicinities where many hogs are allowed to roam at large, as these keen-nosed brutes are very expert at discovering the winter hoards of the Squirrel, which they immediately appropriate to their own use.

"If the Gray Squirrels confined themselves to the diet afforded by the forest trees, the farmers would profit considerably thereby. But, having once tasted the sweetness of Indian corn and other cultivated grains, they leave acorns and such coarse fare to the hogs, while they invade the corn-fields, and carry off and destroy a very large quantity.

"This species is remarkable among all our Squirrels for its beauty and activity. It is in captivity remarkably playful and mischievous, and is more frequently kept as a pet than any other. It becomes very tame, and may be allowed to spend a great deal of the time entirely at liberty, where there is nothing exposed that can be injured by its teeth, which it is sure to try upon every article of furniture, &c., in its vicinity. This Squirrel, when domesticated, drinks frequently, and a considerable quantity of water at each draught.

"The Gray Squirrel varies considerably in colour, but is most commonly of a fine bluish gray, mingled with a slight golden hue. This golden colour is especially obvious on the head, along the sides, where the white hair of the belly approaches the gray of the sides, and on the anterior part of the fore and superior part of the hind feet, where it is very rich and deep. This mark on the hind feet is very permanent, and evident even in those varieties which differ most from the common colour. There is one specimen in the Philadelphia Museum of a light brownish red on all the superior parts of the body."

"The species comprised in this genus are in different degrees remarkable for their sprightly agility and graceful movements, as well as for their personal beauty and neatness. The forest is their appropriate residence, and nature has provided them not only with the means of rapidly ascending the loftiest trees, but with teeth capable of opening the way to food, which is effectually secured from almost every other creature. The hardest nuts found in the woods afford ample provision to the Squirrels, and the number of nuts destroyed by these animals, though small when compared with the whole quantity produced, must have some effect in preventing the superabundant increase of forest trees.

"The muscular strength displayed by these animals is very great, when compared with their size. They make astonishing leaps from branch to branch, and from tree to tree, when engaged in sporting with each other, or endeavouring to escape from pursuit. At such times, when no tree is sufficiently near to be reached by a single spring, the Squirrel unhesitatingly drops from the greatest height to the ground, and falls with a force apparently sufficient to crush him; but no injury is experienced, and a few seconds are sufficient for his escape into the top of the nearest tree.

"The actions of most of these animals are marked by a peculiar vivacity and playfulness. When moving on the ground, Squirrels advance by a succession of short leaps, while the long bushy tail, waving in graceful undulations, renders their whole appearance very interesting. When engaged in listening, they sit erect on their hinder limbs, having the tail beautifully raised against the back, and falling into an easy curve at its extremity towards the ground. In eating, the position is much the same; the food is held in the fore paws, principally between the rudimental thumbs and the adjoining part of the palms. The facility with which they cut through the covering of the hardest nuts is very remarkable; they first turn the nut about until they get it into the most favourable position, and then examine it by gnawing slightly in different places. If the nut be withered or rotten it is speedily thrown aside and another sought. When a good one is obtained, and the proper place for opening it is selected, (which is the thin-

nest part, immediately over the kernel,) a small linear opening is first made, which at length admits the points of the lower front teeth. These are now inserted, and the hole enlarged by breaking off successive pieces of the shell in the direction of the kernel. A hickory-nut is thus frequently cut down on four sides from end to end, leaving the intermediate thick portions untouched. After satisfying his hunger the Squirrel generally buries the superfluous food; previous to the approach of winter large hoards of nuts and grain are collected and secured in the ground for future use. Their nests are at no great distance from these store-houses, and are built of small sticks and leaves in the top branches of forest trees, or in hollows of their trunks, except in the case of a few species which inhabit burrows at all times. All the Squirrels are peculiarly cleanly, and are frequently seen to rub their heads and faces with their fore paws as if for the purpose of washing. When they accidentally step into water they make use of their bushy tail for the purpose of drying themselves, passing it several times through their hands.

"Like most of the animals belonging to this order, they are very prolific, and multiply until from their numbers large districts of country are injuriously overrun by them. They then invade and literally lay waste the corn-fields, consuming vast quantities of grain, and destroy nearly as much as they eat by breaking it down and scattering it on the ground. On such occasions the farmers in thinly settled districts severely suffer, and are deprived of a large share of the fruits of their industry. The efforts of a whole family are occasionally insufficient to drive off or destroy these busy plunderers, as new crowds appear to be continually arriving to renew the depredation.

"While travelling through the state of Ohio, in the autumn of 1822, we had an opportunity of witnessing something of this sort. Parts of the country appeared to swarm with Squirrels, which were so numerous, that, in travelling along the high road, they might be seen scampering in every direction; the woods and fields might be truly said, in the country phrase, to be 'alive with them.' A farmer, who had a large field of Indian corn near the road, informed us, that notwithstanding the continued exertions of himself and his two sons, he feared he should lose the greater part of his crop, in addition to his time and the expense of ammunition used in killing and scaring off the little robbers. This man and his sons frequently took stations in different parts of the field, and killed Squirrels until their guns became too dirty longer to be used with safety; yet they always found, on returning, that the Squirrels had mustered as strongly as before. During this journey we frequently met Squirrel-shooters heavily laden with this game, which, in many instances, they had only desisted from slaying from want of ammunition or through mere fatigue.

"Fortunately for the farmers these animals are not at the same time equally numerous in different parts of the country. We found the Squirrels, in 1822, most numerous throughout the country lying between the Great and Little Miami rivers; they became evidently fewer as we advanced towards Chillicothe, and beyond that place were so rare as to be seldom seen. During some seasons they appear to move in mass, deserting certain districts entirely, and concentrating upon others. In such migrations vast numbers are drowned in crossing the rivers, and numbers are also destroyed by beasts and birds of prey, and various other causes."

THE MOCKING-BIRD.

Among the many novelties which the discovery of this part of the western continent first brought into notice, we may reckon that of the Mocking-bird; which is not only peculiar to the new world, but inhabits a very considerable extent of both North and South America; having been traced from the states of New England to Brazil; and also among many of the adjacent islands. They are, however, much more numerous in those states south, than in those north, of the river Delaware; being generally migratory in the latter, and resident, (at least many of them,) in the former. A warm climate, and low country, not far from the sea, seem most congenial to their nature; accordingly we find the species less numerous to the west than east of the great range of the Alleghany, in the same parallels of latitude. The berries of the red cedar, myrtle, holly, Cassine shrub, many species of smilax, together with gum-berries, gall-berries, and a profusion of others with which the luxuriant swampy thickets of those regions abound, furnish them with a perpetual feast. Winged insects, also, of which they are very fond, and remarkably expert at catching, abound there even in winter, and are an additional inducement to residency.

The precise time at which the Mocking-bird begins to build his nest varies according to the latitude in which he resides. In the lower parts of Georgia he commences building early in April; but in Pennsylvania rarely before the 10th of May; and in New-York, and the states of New-England, still later. There are particular situations to which he gives the preference. A solitary thorn bush, an almost impenetrable thicket; an orange tree, cedar, or holly-bush, are favourite spots, and frequently selected. It is no great objection with him that these happen,

sometimes, to be near the farm or mansion house: always ready to defend, but never overanxious to conceal, his nest, he very often builds within a small distance of the house; and not unfrequently in a pear or apple tree; rarely at a greater height than six or seven feet from the ground. The nest varies a little with different individuals, according to the convenience of collecting suitable materials. It is sometimes composed of the following substances: First a quantity of dry twigs and sticks, then withered tops of weeds of the preceding year, intermixed with fine straws, hay, pieces of wool and tow; and lastly, a thick layer of fine fibrous roots, of a light brown colour, lines the whole. The eggs are four, sometimes five, of a cinerous blue, marked with large blotches of brown. The female sits fourteen days; and generally produces two broods in the season, unless robbed of her eggs, in which case she will even build and lay the third time. She is, however, extremely jealous of her nest, and very apt to forsake it if much disturbed. During the period of incubation, neither cat, dog, animal, or man, can approach the nest without being attacked. The cats, in particular, are persecuted whenever they make their appearance, till obliged to retreat. But his whole vengeance is most particularly directed against that mortal enemy of his eggs and young, the black snake. Whenever the insidious approaches of this reptile are discovered, the male darts upon it with the rapidity of an arrow, dexterously eluding its bite, and striking it violently and incessantly about the head, where it is very vulnerable. The snake soon becomes sensible of its danger, and seeks to escape; but the intrepid defender of his young redoubles his exertions, and, unless his antagonist be of great magnitude, often succeeds in destroying him. All its pretended powers of fascination avail it nothing against the vengeance of this noble bird. As the snake's strength begins to flag, the Mocking-bird seizes and lifts it up, partly from the ground, beating it with its wings, and when the business is completed, he returns to the repository of his young, mounts the summit of the bush, and pours out a torrent of song in token of victory.

As it is of some consequence to be able to distinguish a young male bird from a female, the following marks may be attended to; by which some pretend to be able to distinguish them in less than a week after they are hatched. These are, the breadth and purity of the white on the wings, for that on the tail is not so much to be depended on. This white, in a full grown male bird, spreads over the whole nine primaries, down to, and considerably below, their coverts, which are also white, sometimes lightly tipt with brown. The white of the primaries also extends equally far on both vanes of the feathers. In the female the white is less pure, spreads over only seven or eight of the primaries, does not extend so far, and extends considerably farther down on the broad than on the narrow side of the feathers. The black is also more of a brownish cast.

If the young bird is designed to be taught by an old one, the best singer should be selected for this office, and no other allowed to be beside him. Or if by the bird organ, or mouth whistling, it should be begun early, and continued, pretty constantly, *by the same person*, until the scholar, who is seldom inattentive, has completely acquired his lesson. The best singing birds, however, in my own opinion, are those that have been reared in the country, and educated under the tuition of the feathered choristers of the surrounding fields, groves, woods, and meadows.

The plumage of the Mocking-bird, though none of the homeliest, has nothing gaudy or brilliant in it, and, had he nothing else to recommend him, would scarcely entitle him to notice, but his figure is well proportioned, and even handsome. The ease, elegance and rapidity of his movements, the animation of his eye, and the intelligence he displays in listening and laying up lessons from almost every species of the feathered creation within his hearing, are really surprising, and mark the peculiarity of his genius. To these qualities we may add that of a voice full, strong, and musical, and capable of almost every modulation, from the clear mellow tones of the wood thrush, to the savage scream of the bald eagle. In measure and accent he faithfully follows his originals. In force and sweetness of expression he greatly improves upon them. In his native groves, mounted on the top of a tall bush or half-grown tree, in the dawn of dewy morning, while the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent over every competitor. The ear can listen to his music alone, to which that of all the others seems a mere accompaniment. Neither is this strain altogether imitative. His own native notes, which are easily distinguishable by such as are well acquainted with those of our various song birds, are bold and full, and varied seemingly beyond all limits. They consist of short expressions of two, three, or at the most five or six syllables; generally interspersed with imitations, and all of them uttered with great emphasis and rapidity; and continued, with undiminished ardour, for half an hour, or an hour at a time. His expanded wings and tail, glistening with white, and the buoyant gaiety of his action, arresting the eye, as his song most irresistibly does the ear. He sweeps round with enthusiastic ecstacy—he mounts and descends as his song swells or dies away; and, as Mr. Bartram has beautifully expressed it, "He bounds aloft with the celerity of an arrow, as if to recover or recal his very

soul, expired in the last elevated strain." While thus exerting himself, a bystander, destitute of sight, would suppose that the whole feathered tribes had assembled together, on a trial of skill; each striving to produce his utmost effect; so perfect are his imitations. He many times deceives the sportsman, and sends him in search of birds that perhaps are not within miles of him; but whose notes he exactly imitates: even birds themselves are frequently imposed on by this admirable mimic, and are decoyed by the fancied calls of their mates; or dive, with precipitation, into the depth of thickets, at the scream of what they suppose to be the sparrow hawk.

The Mocking-bird loses little of the power and energy of his song by confinement. In his domesticated state, when he commences his career of song, it is impossible to stand by uninterested. He whistles for the dog; Cæsar starts up, wags his tail, and runs to meet his master. He squeaks out like a hurt chicken, and the hen hurries about with hanging wings, and bristled feathers, clucking to protect its injured brood. The barking of the dog, the mewing of the cat, the creaking of a passing wheel-barrow, follow, with great truth and rapidity. He repeats the tune taught him by his master, though of considerable length, fully and faithfully. He runs over the quiverings of the canary, and the clear whistlings of the Virginia nightingale, or red-bird, with such superior execution and effect, that the mortified songsters feel their own inferiority, and become altogether silent; while he seems to triumph in their defeat by redoubling his exertions.

This excessive fondness for variety, however, in the opinion of some, injures his song. His elevated imitation of the brown thrush are frequently interrupted by the crowing of cocks; and the warblings of the blue-bird, which he exquisitely manages, are mingled with the screaming of swallows, or the cackling of hens; amidst the simple melody of the robin we are suddenly surprised by the shrill reiterations of the whippoorwill; while the notes of the kildeer, blue jay, martin, baltimore, and twenty others, succeed, with such imposing reality, that we look round for the originals, and discover, with astonishment, that the sole performer in this singular *concert* is the admirable bird now before us. During this exhibition of his powers he spreads his wings, expands his tail, and throws himself around the cage in all the ecstacy of enthusiasm, seeming not only to sing, but to dance, keeping time to the measure of his own music. Both in his native and domesticated state, during the solmen stillness of night, as soon as the moon rises in silent majesty, he begins his delightful solo; and serenades us the live long night with a full display of his vocal powers, making the whole neighbourhood ring with his inimitable medley.—Wilson.

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THE TAMARIND-TREE.

The tamarind-tree is a native both of the East Indies and of tropical America, and probably also of Arabia and some parts of Africa. It was very early introduced into England; for Gerarde, whose Herbal was published in 1633, makes mention of it as growing there. It does not often flower in that country, though it has done so in the Royal Gardens at Kew. It is, however, a common ornament of their hot-houses. Where it is a native, it grows to be a large tree, and affords excellent timber—heavy, firm, hard, and durable. The stem is large, covered with brown bark, and divides into many branches; the leaves are not unlike those of the mountain ash, only they are of a brighter green, and the leaflets are closer to the mid-rib. The leaflets are small, but the number in a leaf, (sixteen or eighteen pairs in a leaf, with an odd one at the extremity,) give the tree a very light and elegant appearance. The flowers come out from the sides of the branches in loose bunches, and are followed by the pods, of which there are generally about five or six on a bunch. The pods of the West India tamarinds, are, on an average, about three inches long, and contain about three seeds; those from the East are about double the size.

The pulp in which the seeds of the tamarind are inclosed, contains more acid than any other vegetable substance, in a natural state, with which we are acquainted; and therefore it is used both for sharpening food and drink; and for medicinal purposes. Niebuhr says, "the tamarind is equally useful and agreeable. It has a pulp of a vinous taste, of which a wholesome refreshing liquor is prepared; its shade shelters houses from the torrid heat of the sun; and its fine figure greatly adorns the scenery of the country." Its refreshing properties has given it a place in poetry:

> "The damsel from the tamarind-tree
> Had pluck'd its acid fruit,
> And steep'd it in water long;
> And whoso drank of the cooling draught,
> He would not wish for wine."

Mandelslo, an old traveller, says, that as soon as the sun is set the leaves of the tamarind close up the fruit to preserve it from the dew, and open as soon as that luminary appears again:

> "'Tis the cool evening hour:
> The tamarind, from the dew
> Sheaths its young fruit, yet green."

The East India tamarinds are preserved without sugar, and therefore they are the best for medicinal use. About

forty tons of tamarinds are annually imported into Great Britain.—*Lib. Ent. Know.*

ANECDOTE OF A CAT.

A favourite cat, that was accustomed from day to day to take her station quietly at my elbow, on the writing table, sometimes for hour after hour, whilst I was engaged in study, became at length less constant in her attendance, as she had a kitten to take care of. One morning she placed herself in the same spot, but seemed unquiet, and, instead of seating herself as usual, continued to rub her furry sides against my hand and pen, as though resolved to draw my attention, and make me leave off. As soon as she had accomplished this point, she leaped down on the carpet, and made towards the door, with a look of great uneasiness. I opened the door for her, as she seemed to desire, but, instead of going forward, she turned round, and looked earnestly at me, as though she wished me to follow her, or had something to communicate. I did not fully understand her meaning, and, being much engaged at the same time, shut the door upon her, that she might go where she liked. In less than an hour afterwards, she had again found an entrance into the room, and drawn close to me, but, instead of mounting the table, and rubbing herself against my hand, as before, she was now under the table, and continued to rub herself against my feet, on moving which I struck them against a something which seemed to be in their way, and, on looking down, beheld, with equal grief and astonishment, the dead body of her little kitten, covered over with cinder dust, and which I supposed had been alive and in good health. I now entered into the entire train of this afflicted cat's feelings. She had suddenly lost the nursling she doated on, and was resolved to make me acquainted with it—assuredly that I might know her grief, and probably also that I might inquire into the cause, and, finding me too dull to understand her expressive motioning that I would follow her to the cinder heap on which the dead kitten had been thrown, she took the great labour of bringing it to me herself, from the area on the basement floor, and up a whole flight of stairs, and laid it at my feet. I took up the kitten in my hand, the cat still following me, made inquiry into the cause of its death, which I found, upon summoning the servants, to have been an accident, in which no one was much to blame; and the yearning mother having thus obtained her object, and gotten her master to enter into her cause, and divide her sorrows with her, gradually took comfort, and resumed her former station by my side.—*Good's Book of Nature.*

A TAME PANTHER.

The following interesting notices are from the pen of Mr. Bowdich, and prove that the Panther, notwithstanding all that has been said of his untameable disposition, is nevertheless as capable of domestication as any of his congeners:—

"This Panther and another were found, when very young, in the forest, apparently deserted by their mother. They were taken to the king of Ashantee, in whose palace they lived several weeks, when my hero, being much larger than his companion, suffocated him in a fit of romping, and was then sent to Mr. Hutchison, the resident left by Mr. Bowdich at Coomassie. This gentleman, observing that the animal was very docile, took pains to tame him, and in a great measure succeeded. When he was about a year old, Mr. Hutchison returned to Cape Coast, and had him led through the country by a chain, occasionally letting him loose when eating was going forward, when he would sit by his master's side, and receive his share with comparative gentleness. Once or twice he purloined a fowl, but easily gave it up to Mr. Hutchison, on being allowed a portion of something else. The day of his arrival he was placed in a small court, leading to the private rooms of the governor, and, after dinner, was led by a thin cord into the room, where he received our salutations with some degree of roughness, but with perfect good humour. On the least encouragement, he laid his paws upon our shoulders, rubbed his head upon us, and, his teeth and claws having been filed, there was no danger of tearing our clothes. He was kept in the above court for a week or two, and evinced no ferocity, except when one of the servants tried to pull his food from him: he then caught the offender by the leg, and tore out a piece of flesh, but he never seemed to owe him any ill will afterwards. He one morning broke his cord; and, the cry being given, the castle gates were shut, and a chase commenced. After leading his pursuers two or three times round the ramparts, and knocking over a few children, by bouncing against them, he suffered himself to be caught, and led quietly back to his quarters, under one of the guns of the fortress.

"By degrees, the fear of him subsided, and, orders having been given to the sentinels to prevent his escape through the gates, he was left at liberty to go where he pleased, and a boy was appointed to prevent him from intruding into the apartments of the officers. His keeper, however, generally passed his watch in sleeping: and Saï, as the Panther was called, after the royal giver, roamed at large. On one occasion he found his servant sitting on the step of the door, upright, but fast asleep, when he

lifted his paw, gave him a blow on the side of the head, which laid him flat, and then stood wagging his tail, as if enjoying the mischief he had committed. He became exceedingly attached to the governor, and followed him every where like a dog. His favourite station was at a window of the sitting-room, which overlooked the whole town; there, standing on his hind legs, his fore paws resting on the ledge of the window, and his chin laid between them, he appeared to amuse himself with what was passing beneath. The children also stood with him at the window; and one day, finding his presence an encumbrance, and that they could not get their chairs close, they used their united efforts to pull him down by the tail. He one morning missed the governor, who was settling a dispute in the hall, and who, being surrounded by black people, was hidden from the view of his favourite. Saï wandered, with a dejected look, to various parts of the fortress in search of him; and, while absent on this errand, the audience ceased, the governor returned to his private rooms, and seated himself at a table to write. Presently he heard a heavy step coming up the stairs, and, raising his eyes to the open door, he beheld Saï. At that moment he gave himself up for lost, for Saï immediately sprang from the door on to his neck. Instead, however, of devouring him, he laid his head close to the governor's, rubbed his cheek upon his shoulder, wagged his tail, and tried to evince his happiness. Occasionally, however, the Panther caused a little alarm to the other inmates of the castle, and the poor woman who swept the floors, or, to speak technically, the *pra-pra* woman, was made ill by her fright. She was one day sweeping the boards of the great hall with a short broom, and in an attitude nearly approaching to all-fours, and Saï, who was hidden under one of the sofas, suddenly leaped upon her back, where he stood in triumph. She screamed so violently as to summon the other servants, but they, seeing the Panther, as they thought, in the act of swallowing her, one and all scampered off as quickly as possible; nor was she released, till the governor, who heard the noise, came to her assistance. Strangers were naturally uncomfortable when they saw so powerful a beast at perfect liberty, and many were the ridiculous scenes which took place, they not liking to own their alarm, yet perfectly unable to retain their composure in his presence.

"This interesting animal was well fed twice every day, but never given any thing with life in it. He stood about two feet high, and was of a dark yellow colour, thickly spotted with black rosettes; and, from the good feeding and the care taken to clean him, his skin shone like silk. The expression of his countenance was very animated and good-tempered, and he was particularly gentle to children; he would lie down on the mats by their side when they slept; and even the infant shared his caresses, and remained unhurt. During the period of his residence at Cape Coast, I was much occupied by making arrangements for my departure from Africa, but generally visited my future companion every day, and we, in consequence, became great friends before we sailed. He was conveyed on board the vessel in a large wooden cage, thickly barred in front with iron. Even this confinement was not deemed a sufficient protection by the canoe men, who were so alarmed at taking him from the shore to the vessel, that, in their confusion, they dropped cage and all into the sea. For a few minutes I gave up my poor Panther as lost, but some sailors jumped into a boat belonging to the vessel, and dragged him out in safety. The beast himself seemed completely subdued by his ducking, and, as no one dared to open the cage to dry it, he rolled himself up in one corner, nor roused himself till after an interval of some days, when he recognized my voice. When I first spoke, he raised his head, held it on one side, then on the other, to listen; and when I came fully into his view, he jumped on his legs, and appeared frantic; he rolled himself over and over, he howled, he opened his enormous jaws and cried, and seemed as if he would have torn his cage to pieces. However, as his violence subsided, he contented himself with thrusting his paws and nose through the bars of the cage, to receive my caresses. I suspect that he suffered from sea sickness, as he had apparently loathed all food; but, after this period, he ate every thing that was given to him.

"The greatest treat I could bestow upon my favourite was lavender water. Mr. Hutchison had told me that, on the way from Ashantee, he drew a scented handkerchief from his pocket, which was immediately seized on by the Panther, who reduced it to atoms; nor could he venture to open a bottle of perfume when the animal was near, he was so eager to enjoy it. I indulged him twice a week, by making a cup of stiff paper, pouring a little lavender water into it, and giving it to him through the bars of his cage: he would drag it to him with great eagerness, roll himself over it, nor rest till the smell had evaporated. By this I taught him to put out his paws without showing his nails, always refusing the lavender water till he had drawn them back again; and, in a short time, he never, on any occasion, protruded his claws when offering me his paw.

"We lay eight weeks in the river Gaboon, where he had plenty of excellent food, but was never suffered to leave his cage, on account of the deck being always filled with black strangers, to whom he had a very decided aversion, although he was perfectly reconciled to white people.

His indignation, however, was constantly excited by the pigs, when they were suffered to run past his cage; and the sight of one of the monkeys put him in complete fury. While at anchorin the before mentioned river, an ourang-outang, (*Simia Satyrus*) was brought for sale, and lived three days on board; and I shall never forget the uncontrollable rage of the one, or the agony of the other, at this meeting. The ourang was about three feet high, and very powerful in proportion to his size; so that when he fled, with extraordinary rapidity, from the Panther to the farther end of the deck, neither men nor things remained upright when they opposed his progress: there he took refuge in a sail, and, although generally obedient to the voice of his master, force was necessary to make him quit the shelter of its folds. As to the Panther, his back rose in an arch, his tail was elevated and perfectly stiff, his eyes flashed, and, as he howled, he showed his huge teeth; then, as if forgetting the bars before him, he tried to spring on the ourang, to tear him to atoms. It was long before he recovered his tranquillity; day and night he appeared to be on the listen; and the approach of a large monkey we had on board, or the intrusion of a black man, brought a return of his agitation.

"We at length sailed for England, with an ample supply of provisions; but, unhappily, we were boarded by pirates during the voyage, and nearly reduced to starvation. My Panther must have perished, had it not been for a collection of more than three hundred parrots with which we sailed from the river, and which died very fast while we were in the north-west trades. Sai's allowance was one per diem, but this was so scanty a pittance that he became ravenous, and had no patience to pick all the feathers off before he commenced his meal. The consequence was, that he became very ill, and refused even this small quantity of food. Those around tried to persuade me that he suffered from the colder climate; but his dry nose and paws convinced me that he was feverish, and I had him taken out of his cage; when, instead of jumping about and enjoying his liberty, he lay down, and rested his head upon my feet. I then made him three pills, each containing two grains of calomel. The boy who had the charge of him, and who was much attached to him, held his jaws open, and I pushed the medicine down his throat. Early the next morning I went to visit my patient, and found his guard sleeping in the cage with him; and having administered a farther dose to the invalid, I had the satisfaction of seeing him perfectly cured by the evening. On the arrival of the vessel in the London Docks, Saï was taken ashore, and presented to the Duchess of York, who placed him in Exeter Change, to be taken care of, till she herself went to Oatlands. He remained there for some weeks, and was suffered to roam about the greater part of the day without any restraint. On the morning previous to the Duchess' departure from town, she went to visit her new pet, played with him, and admired his healthy appearance and gentle deportment. In the evening, when her Royal Highness' coachman went to take him away, he was dead."

THE REIN DEER.

The adult male of this species, in a wild state, is the size of a stag, or about four and a half to five feet high; but the female is fully less than the hind. It is the only species of the genus which has been completely domesticated, and that is steadily employed in the service of man. It is found in most of the northern countries of Europe, Asia, and America. The colour is of a dusky brown above, and white beneath. The space between the eyes is black. The hair on the lower part of the neck is much longer than on any other place. The hoofs are large, long, and black. The female of this species has horns, as well as the male; but those of the latter are much the largest. These are long, slender, branched, and upright, furnished with brown antlers with widely expanded and palmated tips, directed forward.

The figure of the Rein Deer is rather heavy, when compared with other species. The neck is short, and the head carried straight forward, giving the animal a dull appearance. The females produce, in May, two fawns at at a birth.

The Rein Deers swim with great facility, and are so buoyant, as to keep half of the back above water; and the great size of their feet enables them to make rapid way across even the strongest currents. They defend themselves with great courage, and kick furiously with their hind feet, when attacked by the wolf, seldom failing to repel a single one.

To the poor Laplanders, the Rein Deer is a substitute for the horse and cow, goat and sheep. They make cheese of its milk; feed on its flesh; and clothe themselves with its skin. They make its tendons into bow-strings; and, when split, use them as a coarse kind of thread. They boil their horns into glue, and make their bones into spoons; and, in winter, the Rein Deer supplies the place of a horse, by drawing their sledges; and that even across the snows, in which the breadth of their hoofs prevents them from sinking. They run at great speed, performing immense journeys. With two of them yoked in a sledge, it is said the Laplander will travel upwards of a hundred

English miles in a day; or, according to their own way of reckoning, they can thrice change the horizon in twenty-four hours—that is, they can three times pass the most remote object which presents itself, at their setting out, in these dreary wastes.

The sledge is somewhat the shape of a boat, having a back board, for the Laplander to lean against. Its bottom is convex, and so constructed, that it requires considerable experience to enable the traveller to maintain his equilibrium. To this the Laplander ties himself; and manages the animals with great dexterity, by means of a stick and the reins. Before he enters the sledge, he puts on his gloves, rolls the reins round his right thumb, and then seats himself, giving the reins a violent shake, when the animals bound off with astonishing fleetness. Besides the reins, in directing the course of the Deer, he uses his voice. The Laplander lightens the tedium of his journey, by chanting some wild love song. These often possess much beauty, and breathe the native wildness of that rude and uncivilized people. Several of these have been translated into English, and have attracted universal admiration, for their simplicity. The following is a specimen of one of these, from Consett's *Tour in Lapland*. It affords a happy illustration of that consolation which contentment brings, in any condition of life.

The snows are dissolving on Tornao's rude side,
And the ice of Lulhea flows down the dark tide:
Thy dark stream, oh, Lulhea, flows freely away!
And the snow-drop unfolds her pale beauties to-day.
Far off the keen terrors of winter retire,
And the North's dancing streamers relinquish their fire
The sun's genial beams swell the bud on the tree,
And Enna chants forth her wild warblings with glee.
The Rein Deer, unharness'd, in freedom shall play,
And safely o'er Odon's steep precipice stray;
The wolf to the forest's recesses shall fly,
And howl to the moon as she glides through the sky.
Then haste, my fair Lush, oh! haste to the grove,
And pass the sweet season in rapture and love;
In youth let our bosoms in ecstacy glow,
For the winter of life ne'er a transport can know.

It may seem difficult to account for the mode by which these people direct their course to their destination, over a country which presents a uniform surface of snow and ice—and this, even during the night. It is to the Rein Deer they trust their lives; and accidents are said to be of rare occurrence.

The Rein Deer feeds on the *Lichen rangiferinus*, and the *Lichen Islandicus*, the buds of coniferous evergreens, and other arctic plants.

It is singular, that this animal inhabits a very limited

physical range, and cannot exist beyond these precincts. Cuvier, after a laborious investigation of these limits, has proved, that it never extended farther north than the northern boundary of Poland, nor farther south than the Baltic. An attempt to naturalize this species in Great Britain was made in 1823, but failed. In the autumn of that year, a Norwegian, with five Deer, arrived in England, which were conveyed to the seat of a gentleman in Worcestershire. There they remained during the winter; and were fed with the *Lichen rangiferinus*. They continued healthy until the following April, when they were removed to Clee Hill, on the highest part of which that lichen grows in great abundance; but before winter they had all died. The same attempt was made in Ireland; but with no better success. The Rein Deer is found wild in the Uralian mountains, and in Siberia.—*Brown's Anec. of Quad.*

SNOW STORM.

[There is something exceedingly graphic and interesting in the following description of a snow storm in Scotland, by the Ettrick Shepherd, and it is well calculated to give an impressive idea of the power of nature in one of her most magnificent aspects.]

Of all the storms that ever Scotland witnessed, or I hope ever will again behold, there is none of them that can once be compared with the memorable 24th of January, 1794, which fell with such peculiar violence on that division of the south of Scotland that lies between Crawford-muir and the border. In that bounds there were seventeen shepherds perished, and upwards of thirty carried home insensible, who afterwards recovered; but the number of sheep that were lost far outwent any possibility of calculation. One farmer alone, lost seventy-two scores for his own share—and many others, in the same quarter, from thirty to forty scores each. Whole flocks were overwhelmed with snow, and no one ever knew where they were till the snow was dissolved, that they were all found dead. I myself witnessed one particular instance of this on the farm of Thickside; there were twelve scores of excellent ewes, all one age, that were missing there all the time that the snow lay, which was only a week, and no traces of them could be found; when the snow went away, they were discovered all lying dead, with their heads one way, as if a flock of sheep had dropped dead going from the washing. Many hundreds were driven into waters, burns, and lakes, by the violence of the storm, where they were buried or frozen up, and these the flood carried away, so that they were never seen or found by the owners at all. The following anecdote somewhat illustrates the confusion and devastation that it bred in the

country. The greater part of the rivers on which the storm was most deadly, run into the Solway Frith, on which there is a place called *the Beds of Esk*, where the tide throws out, and leaves whatsoever is carried into it by the rivers. When the flood after the storm subsided, there were found on that place, and the shores adjacent, 1840 sheep, nine black cattle, three horses, two men, one woman, forty-five dogs, and one hundred and eighty hares, beside a number of meaner animals.

To relate all the particular scenes of distress that occurred during this tremendous hurricane is impossible—a volume would not contain them. I shall, therefore, in order to give a true picture of the storm, merely relate what I saw, and shall in nothing exaggerate. But before doing this, I must mention a circumstance, curious in its nature, and connected with others that afterwards occurred.

Sometime previous to that, a few young shepherds, (of whom I was one, and the youngest, though not the least ambitious of the number,) had formed themselves into a sort of literary society, that met periodically, at one or other of the houses of its members, where each read an essay on a subject previously given out; and after that, every essay was minutely investigated and criticised. We met in the evening, and continued our important discussions all night. Friday, the 23d of January, was the day appointed for one of these meetings, and it was to be held at Entertrony, a wild and remote shieling, at the very sources of the Ettrick, and now occupied by my own brother. I had the honour of having been named as preses—so, leaving the charge of my flock with my master, off I set from Blackhouse, on Thursday, a very ill day, with a flaming bombastical essay in my pocket, and my tongue trained to many wise and profound remarks, to attend this extraordinary meeting, though the place lay at the distance of twenty miles, over the wildest hills in the kingdom, and the time the depth of winter. I remained that night with my parents at Ettrick-house, and next day again set out on my journey. I had not, however, proceeded far, before I perceived, or thought I perceived, symptoms of an approaching storm, and that of no ordinary nature. I remember the day well: the wind, which was rough on the preceding day, had subsided into a dead calm; there was a slight fall of snow, which descended in small, thin flakes, that seemed to hover and reel in the air, as if uncertain whether to go upward or downward—the hills were covered down to the middle in deep folds of rime, or frost-fog—in the cloughs that was dark, dense, and seemed as if it were heaped and crushed together—but on the brows of the hills it had a pale and fleecy appearance, and, altogether, I never beheld a day of such gloomy aspect. A thought now began to intrude itself on me, though I strove all that I could to get quit of it, that it would be a wise course in me to return home to my sheep. Inclination urged me on, and I tried to bring reason to her aid, by saying to myself, "I have no reason in the world to be afraid of my sheep, my master took the charge of them cheerfully, there is not a better shepherd in the kingdom, and I cannot doubt his concern in having them right." All would not do; I stood still and contemplated the day, and the more closely I examined it, the more was I impressed that some mischief was a brewing; so, with a heavy heart, I turned on my heel, and made the best of my way back the road I came; my elaborate essay, and all my wise observations, had come to nothing.

On my way home, I called at a place named the Hope-house, to see a maternal uncle, whom I loved; he was angry when he saw me, and said it was not like a prudent lad to be running up and down the country in such weather, and at such a season; and urged me to make haste home, for it would be a drift before the morn. He accompanied me to the top of the height called the Black Gate-head, and on parting, he shook his head, and said, "Ah! it is a dangerous looking day! In troth I'm amaist fear'd to look at it." I said I would not mind it, if any one knew from what quarter the storm would arise; but we might, in all likelihood, gather our sheep to the place where they would be most exposed to danger. He bade me keep a good look out all the way home, and wherever I observed the first opening through the rime, to be assured the wind would rise directly from that point. I did as he desired me, but the clouds continued close set all around, till the fall of evening; and as the snow had been accumulating all day, so as to render walking very unfurthersome, it was that time before I reached home. The first thing I did was to go to my master and inquire where he had left my sheep—he told me—but though I had always the most perfect confidence in his experience, I was not pleased with what he had done—he had left a part of them far too high out on the hills, and the rest were not where I wanted them, and I told him so: he said he had done all for the best, but if there appeared to be any danger, if I would call him up in the morning, he would assist me. We had two beautiful servant girls, and with them I sat chattering till past eleven o'clock, and then I went down to the old tower. What could have taken me to that ruinous habitation of the Black Danglasses at that untimeous hour, I cannot recollect, but it certainly must have been from a supposition that one of the girls would follow me, or else that I would see a hare—both very unlikely events to have taken place on such a night. However, certain it is, that there I was at

midnight, and it was while standing on the top of the staircase turret, that I first beheld a bright bore through th clouds, toward the north, which reminded me of my uncle's apophthegm. But at the same time a smart thaw had commenced, and the breeze seemed to be rising from the south, so that I laughed in my heart at his sage rule, and accounted it quite absurd. Short was the time till awful experience told me how true it was.

I then went to my bed in the byre loft, where I slept with a neighbour shepherd, named Borthwick; but though fatigued with walking through the snow, I could not close an eye, so that I heard the first burst of the storm, which commenced between one and two, with a fury that no one can conceive who does not remember of it. Besides, the place where I lived being exposed to two or three gathered winds, as they are called by shepherds, the storm raged there with redoubled ferocity. It began all at once, with such a tremendous roar, that I imagined it was a peal of thunder, until I felt the house trembling to its foundation. In a few minutes I went and thrust my naked arm through a hole in the roof, in order, if possible, to ascertain what was going on without, for not a ray of light could I see. I could not then, nor can I yet, express my astonishment. So completely was the air overloaded with falling and driving snow, that but for the force of the wind, I felt as if I had thrust my arm into a wreath of snow. I deemed it a judgment sent from heaven upon us, and lay down again in my bed, trembling with agitation. I lay still for about an hour, in hopes that it might prove only a temporary hurricane; but, hearing no abatement of its fury, I awakened Borthwick, and bade him get up, for it was come on such a night or morning, as never blew from the heavens. He was not long in obeying, for as soon as he heard the turmoil, he started from his bed, and in one minute, throwing on his clothes, he hasted down the ladder, and opened the door, where he stood for a good while, uttering exclamations of astonishment. The door where he stood was not above fourteen yards from the door of the dwelling house, but a wreath was already amassed between them, as high as the walls of the house—and in trying to get round or through this, Borthwick lost himself, and could neither find the house nor his way back to the byre, and about six minutes after, I heard him calling my name, in a shrill, desperate tone of voice, at which I could not refrain from laughing immoderately, notwithstanding the dismal prospect that lay before us; for I heard, from his cries, where he was. He had tried to make his way over the top of a large dunghill, but going to the wrong side, had fallen over, and wrestled long among snow, quite over the head. I did not think proper to move to his assistance, but lay still, and shortly after, heard him shouting at the kitchen door for instant admittance; still I kept my bed for about three quarters of an hour longer; and then, on reaching the house with much difficulty, found our master, the ploughman, Borthwick, and the two servant maids, sitting round the kitchen fire with looks of dismay, I may almost say despair. We all agreed at once, that the sooner we were able to reach the sheep the better chance we had to save a remnant; and as there were eight hundred excellent ewes, all in one lot, but a long way distant, and the most valuable lot of any on the farm, we resolved to make a bold effort to reach them. Our master made family worship, a duty he never neglected; but that morning, the manner in which we manifested our trust and confidence in heaven, was particularly affecting. We took our breakfast—stuffed our pockets with bread and cheese—sewed our plaids around us—tied down our hats with napkins coming below our chins—and each taking a strong staff in his hand, we set out on the attempt.

No sooner was the door closed behind us than we lost sight of each other—seeing there was none—it was impossible for a man to see his hand held up before him, and it was still two hours till day. We had no means of keeping together but by following to one another's voices, nor of working our way save by groping with our staves before us. It soon appeared to me a hopeless concern, for ere ever we got clear of the houses and haystacks, we had to roll ourselves over two or three wreaths which it was impossible to wade through; and all the while the wind and drift were so violent, that every three or four minutes we were obliged to hold our faces down between our knees, to recover our breath.

We soon got into an eddying wind that was altogether insufferable, and at the same time we were struggling among snow so deep, that our progress in the way we purposed going was indeed very equivocal, for we had, by this time, lost all idea of east, west, north, or south. Still we were as busy as men determined on a business could be, and persevered on we knew not whither, sometimes rolling over the snow, and sometimes weltering in it to the chin. The following instance of our successful exertions marks our progress to a tittle. There was an inclosure around the house to the westward, which we denominated the park, as is customary in Scotland. When we went away, we calculated that it was two hours until day—the park did not extend above 300 yards—and we were still engaged in that park when day-light appeared.

When we got free of the park, we also got free of the eddy of the wind—it was now straight in our faces—we went in a line before each other, and changed places every three or four minutes, and at length, after great fatigue, we reached a long ridge of a hill, where the snow was thin-

ner, having been blown off it by the force of the wind, and by this time we had hopes of reaching within a short space of the ewes, which were still a mile and a half distant. Our master had taken the lead; I was next him, and soon began to suspect, from the depth of the snow, that he was leading us quite wrong, but as we always trusted implicitly to him that was foremost for the time, I said nothing for a good while, until satisfied that we were going in a direction very nearly right opposite to that we intended. I then tried to expostulate with him, but he did not seem to understand what I said, and, on getting a glimpse of his countenance, I perceived that it was quite altered. Not to alarm the others, nor even himself, I said I was becoming terribly fatigued, and proposed that we should lean on the snow and take each a mouthful of whiskey, (for I had brought a small bottle in my pocket for fear of the worst,) and a bite of bread and cheese. This was unanimously agreed to, and I noted that he swallowed the spirits rather eagerly, a thing not usual with him, and when he tried to eat, it was long before he could swallow any thing. I was convinced that he would fail altogether, but, as it would have been easier to have got him to the shepherd's house before than home again, I made no proposal for him to return. On the contrary, I said if they would trust themselves entirely to me, I would engage to lead them to the ewes without going a foot out of the way—the other two agreed to it, and acknowledged that they knew not where they were, but he never opened his mouth, nor did he speak a word for two hours thereafter. It had only been a temporary exhaustion, however; for after that he recovered, and wrought till night as well as any of us, though he never could recollect a single circumstance that occurred during that part of our way, nor a word that was said, nor of having got any refreshment whatever.

At half an hour after ten, we reached the flock, and just in time to save them; but before that, both Borthwick and the ploughman had lost their hats, notwithstanding all their precautions; and to impede us still farther, I went inadvertently over a precipice, and going down head foremost, between the scaur and the snow, found it impossible to extricate myself; for the more I struggled, I went the deeper. For all our troubles, I heard Borthwick above convulsed with laughter; he thought he had got the affair of the dunghill paid back. By holding by one another, and letting down a plaid to me, they hauled me up, but I was terribly incommoded by snow that had got inside my clothes.

The ewes were standing in a close body; one half of them were covered over with snow to the depth of ten feet, the rest were jammed against a brae. We knew not what to do for spades to dig them out; but, to our agreeable astonishment, when those before were removed, they had been so close pent together as to be all touching one another, and they walked out from below the snow after their neighbours in a body. If the snow-wreath had not broke, and crumbled down upon a few that were hindmost, we should have got them all out without putting a hand to them. This was effecting a good deal more than I or any of the party expected a few hours before; there were 100 ewes in another place near by, but of these we could only get out a very few, and lost all hopes of saving the rest.

It was now wearing towards mid-day, and there were occasionally short intervals in which we could see about us for perhaps a score of yards; but we got only one momentary glance of the hills around us all that day. I grew quite impatient to be at my own charge, and leaving the rest, I went away to them by myself, that is, I went to the division that was left far out on the hills, while our master and the ploughman volunteered to rescue those that were down on the lower ground. I found mine in miserable circumstances, but making all possible exertion, I got out about one half of them, which I left in a place of safety, and made towards home, for it was beginning to grow dark, and the storm was again raging, without any mitigation, in all its darkness and deformity. I was not the least afraid of losing my way, for I knew all the declivities of the hills so well, that I could have come home with my eyes bound up, and, indeed, long ere I got home, they were of no use to me. I was terrified for the water, (Douglas Burn,) for in the morning it was flooded and gorged up with snow in a dreadful manner, and I judged that it would be quite impassable. At length I came to a place where I thought the water should be, and fell a boring and groping for it with my long staff. No, I could find no water, and began to dread, that for all my accuracy I had gone wrong. I was greatly astonished, and, standing still to consider, I looked up toward heaven, I shall not say for what cause, and to my utter amazement thought I beheld trees over my head flourishing abroad over the whole sky. I never had seen such an optical delusion before; it was so like enchantment, that I knew not what to think, but dreaded that some extraordinary thing was coming over me, and that I was deprived of my right senses. I remember I thought the storm was a great judgment sent on us for our sins, and that this strange phantasy was connected with it, an illusion effected by evil spirits. I stood a good while in this painful trance; at length, on making a bold exertion to escape from the fairy vision, I came all at once in contact with the old tower. Never in my life did I experience such a relief; I was not only all at once freed from the fairies, but from the dangers of the gorged river. I had

come over it on some mountain of snow, I knew not how nor where, nor do I know to this day. So that, after all, they were trees that I saw, and trees of no great magnitude neither; but their appearance to my eyes it is impossible to describe. I thought they flourished abroad, not for miles, but for hundreds of miles, to the utmost verge of the visible heavens. Such a day and such a night may the eye of a shepherd never again behold.

[*Shepherd's Calendar.*

PURPLE FINCH.

FRINGILLA PURPUREA.

[Plate XXII. Vol. 2.—on a branch of Sycamore.]

Fringilla Purpurea, Gmel. *Syst.* i. 923.—*Bouvreuil violet de la Caroline*, Buff. iv. 395.—*Purple Finch, Arct. Zool.* ii. *No.* 258.—Catesb. i. 41.—Lath. *Syn.* iii. 275, 39.—*Crimson-headed Finch, Arct. Zool.* ii. *No.* 257.—Latham, *Syn.* iii. 275, 39.—*Hemp-bird*, Bartram, 291.—*Fringilla Purpurea, Id.* 291.—J. Doughty's Collection.

This is a winter bird of passage, coming to us in large flocks from the north, in September and October, great numbers remaining with us in Pennsylvania during the whole winter, feeding on the seeds of the poplar, button-wood, juniper, cedar; and on those of many rank weeds that flourish in rich bottoms, and along the margin of creeks. When the season is very severe they proceed to the south, as far at least as Georgia, returning north early in April. They now frequent the elm trees, feeding on the slender but sweet covering of the flowers; and as soon as the cherries put out their blossoms, feed almost exclusively on the stamina of the flowers; afterwards the apple blossoms are attacked in the same manner; and their depredations on these continue till they disappear, which is usually about the 10th or middle of May. I have been told that they sometimes breed in the northern parts of New-York, but have never met with their nests. About the middle of September I found these birds numerous on Long Island, and round Newark, in New-Jersey. They fly at a considerable height in the air, and their note is a single *chink*, like that of the Rice-bird. They possess great boldness and spirit, and when caught, bite violently, and hang by the bill from your hand, striking with great fury; but they are soon reconciled to confinement, and in a day or two are quite at home. I have kept a pair of these birds upwards of nine months, to observe their manners. One was caught in a trap, the other was winged with the gun; both are now as familiar as if brought up from the nest by the hand, and seem to prefer hempseed and cherry blossoms to all other kinds of food. Both male and female, though not crested, are almost constantly in the habit of erecting the feathers of the crown; they appear to be of a tyrannical and domineering disposition, for they nearly killed an indigo-bird, and two or three others that were occasionally placed with them, driving them into a corner of the cage, standing on them and tearing out their feathers, striking them on the head, munching their wings, &c. &c., till I was obliged to interfere; and even if called to, the aggressor would only turn up a malicious eye to me for a moment, and renew his outrage as before. They are a hardy, vigorous bird. In the month of October, about the time of their first arrival, I shot a male, rich in plumage, and plump in flesh, but which wanted one leg, that had been taken off a little above the knee; the wound had healed so completely, and was covered with so thick a skin, that it seemed as though it had been so for years. Whether this mutilation was occasioned by a shot, or in party quarrels of its own, I could not determine; but our invalid seemed to have used his stump either in hopping or resting, for it had all the appearance of having been brought in frequent contact with other bodies harder than itself.

This bird is a striking example of the truth of what has been frequently repeated, that in many instances the same bird has been more than once described by the same person as a different species; for it is a fact which time will establish, that the Crimson-headed Finch of Pennant and Latham, the Purple Finch of the same and other naturalists, the Hemp-bird of Bartram, and the Fringilla rosea of Pallas, are one and the same, *viz:* the Purple Finch, the subject of the present article.

The Purple Finch is six inches in length, and nine in extent; head, neck, back, breast, rump, and tail coverts, dark crimson, deepest on the head and chin, and lightest on the lower part of the breast; the back is streaked with dusky; the wings and tail are also dusky black, edged with reddish; the latter a good deal forked; round the base of the bill the recumbent feathers are of a light clay or cream colour; belly and vent white; sides under the wings streaked with dull reddish; legs a dirty purplish flesh colour; bill short, strong, conical, and of a dusky horn colour; iris dark hazle; the feathers covering the ears are more dusky red than the other parts of the head. This is the male, when arrived at its full colours. The female is nearly of the same size, of a brown olive or flax colour, streaked with dusky black; the head seamed with lateral

lines of whitish; above and below the hind part of the ear feathers, are two streaks of white; the breast is whitish, streaked with a light flax colour; tail and wings as in the male, only both edged with dull brown, instead of red; belly and vent white. This is also the colour of the young during the first, and to at least the end of the second season, when the males begin to become lightly yellowish, which gradually brightens to crimson; the female always retains nearly the same appearance. The young male bird of the first year may be distinguished from the female by the tail of the former being edged with olive green; that of the latter with brown. A male of one of these birds, which I kept for some time, changed in the month of October, from red to greenish yellow, but died before it recovered its former colour.—Wilson.

PINE FINCH.

FRINGILLA PINUS.

[Plate XXII. Vol. 2.]

J. Doughty's Collection.

This little northern stranger visits us in the month of November, and seeks the seeds of the black alder, on the borders of swamps, creeks and rivulets. As the weather becomes more severe, and the seeds of the *Pinus canadensis* are fully ripe, these birds collect in large flocks, and take up their residence, almost exclusively, among these trees. In the gardens of Bushhill, in the neighbourhood of Philadelphia, a flock of two or three hundred of these birds have regularly wintered many years; where a noble avenue of pine trees, and walks covered with fine white gravel, furnish them with abundance through the winter. Early in March they disappear, either to the north, or to the pine woods that cover many lesser ranges of the Alleghany. While here they are often so tame as to allow you to walk within a few yards of the spot where a whole flock of them are sitting. They flutter among the branches, frequently hanging by the cones, and uttering a note almost exactly like that of the goldfinch, (*F. tristis.*) I have not a doubt but this bird appears in a richer dress in summer in those places where he breeds as he has so very great a resemblance to the bird above mentioned, with whose changes we are well acquainted.

The length of this species is four inches, breadth eight inches; upper part of the head, the neck and back, a dark flaxen colour, streaked with black; wings black, marked with two rows of dull white or cream colour; whole wing quills, under the coverts, rich yellow, appearing even when the wings are shut; rump and tail coverts yellowish, streaked with dark brown; tail feathers rich yellow from the roots half way to the tips, except the two middle ones, which are blackish brown, slightly edged with yellow; sides under the wings of a cream colour, with long streaks of black; breast a light flaxen colour, with small streaks or pointed spots of black; legs purplish brown; bill a dull horn colour; eyes hazel. The female was scarcely distinguishable by its plumage from the male. The New-York Siskin of Pennant appears to be only the yellow-bird, (*Fringilla tristis,*) in his winter dress.

This bird has a still greater resemblance to the Siskin of Europe, (*F. spinus,*) and may perhaps be the species described by Turton, as the Black Mexican Siskin, which he says is varied above with black and yellowish, and is white beneath, and which is also said to sing finely. This change from flaxen to yellow is observable in the Goldfinch; and no other two birds of our country resemble each other more than these do in their winter dresses.—*Ib.*

INSTRUCTIONS TO YOUNG SPORTSMEN.

No. 6.

My remarks in the present number will be confined to woodcock and snipe shooting, this being also readily sought after by the young sportsman, as these birds appear in their proper seasons, in the neighbourhood almost of every farm, town or city of the United States.

The woodcock is a bird of very singular habits, and is, perhaps, one of the most itinerant of the feathered tribe, for it not only makes long journies over land, passing from clime to clime in a single night, but is ever moving throughout a neighbourhood in search of food, so soon as darkness covers the earth.

The sluggishness of this bird at times, when flushed by the sportsman, may be attributed to its wanderings on the preceding night, especially if it should have been a clear, moonlight night. The indisposition, however, it manifests to quit its hiding place, arises more from the painful influence of the light on the vision; these operating against the bird, make it a favourite object of pursuit by the young sportsman, who, though unskilful in shooting either snipe or partridges, is sometimes very successful after woodcocks.

In particular seasons of the year the woodcock is a most delicious bird, and may justly vie with any other delicacy

for the platter; but system in shooting is so little regarded in this country, that no season is considered propitious, except that in which the rapacious shooter may fill his unsatisfied game-bag. No respect is paid by many, even to the period of incubation, when the bird, being so intent either to its mate, or the performance of parental duties, may be approached within a few feet, and thus become the victim to an unfeeling destroyer. The bird, at this time, if driven from the ground, will fly but a few yards and settle again; or if towards the close of day, will ascend into the air, and after performing a few certain flights, uttering some musical notes the whole time, will descend within a few feet of the spot from which it sprang. When on the ground, it has a note peculiar to itself, and is never heard before twilight, but at all hours during the night, and is very much like the sound produced by blowing one of those small trumpets, with which most are acquainted. The latter action of the bird is sure evidence that the pairing time has arrived, and is performed mostly by the male bird, while the female is attending to her more sacred rites.

After the 1st of February, no woodcock should be killed, for in mild seasons they begin to pair and lay during that month, and there are no birds which produce their young so soon as these. In several instances, the author has found by the middle of February the *ovaria* so large, as to require but few more days to produce the perfect egg. The young birds have also been found capable of flying in the early part of April. There are other reasons why they should not be killed so late in the season, and these are, the poverty and unflavoured state of the flesh. Woodcocks feed altogether on worms and insects, which, being either destroyed or driven into the earth by rigorous weather, little or no means are furnished for their subsistence; hence, when they make their appearance to the north in February, they have just commenced their migrations from the south, and before the earth-worm, (which is their favourite food,) can be obtained in sufficient quantities to create fatness, incubation is progressing, and of course the consequent poverty of the parent bird succeeds. After this is experienced, they do not recover from the effects until their progeny is reared, or until autumn approaches; the old and young are alike miserable, poor and covered with vermin. The fact then may be established, that the only proper time for shooting woodcocks, is either in the fall, or, if you choose, from September until the 1st of February.

I would advise you not to hunt at the commencement of the season; this, you know, generally commences in July. In New-Jersey it is established by law on the 5th. The above reasons alone should deter you from it, and if they are not sufficient, others may be adduced which should satisfy you; these are, first, the successive hot weather during the months of July and August; and again, the impossibility of preserving longer than a few hours the birds you may have killed. Shooting, if well followed, is laborious work under the best circumstances; but, to pursue woodcocks under a scorching sun, through all of those different places which are frequented by them, requires effort and energy, which can only be sustained in a cool and bracing atmosphere for any length of time, is laborious and fatiguing beyond conception, and is often productive of a fevered system, great lassitude, and frequently sickness. At this period, too, your efforts are seldom rewarded by a proportionable quantity of game, and, that which you have procured, should you persevere through the day in hunting, will, no doubt, be spoiled and useless ere you get home. Should you, however, after all, be disposed to pursue the sport during these months, I would advise you to start very early in the morning, and retire to some house, or shady retreat, about eleven o'clock, where you should remain until three or four o'clock in the afternoon. The interval, at any rate, is an unpropitious time for shooting any description of game, particularly woodcocks, as the influence of the light and heat will drive them into the most shady and retired parts of the swamps, or cause them to be two-fold more tenacious of their resting places. The latter part of the afternoon, especially towards the close of day, is the best time for hunting. Should you then be beating a meadow in the vicinity of a swampy thicket, you must approach the edges of the latter, where the birds are most likely to be.

In hunting woodcocks, you cannot beat the ground too well; above all, proceed only at a very moderate rate, pausing every few steps for a moment or two, which I have found often causes the birds to spring, when constant progress would tend to keep them quiet. During these months, (July, August, and September,) the birds are scattered over all parts of the northern country, unless the season should be uncommonly dry. Woodcocks do not like much water, and constant rains will drive them from the low lands; but moist grounds of a loamy nature are places of their most favourite resort. In meadows of this bottom where cattle have been grazing, you will mostly find some of these birds. The grass in such places is generally of sufficient height to afford them shelter, while the tracks and spots made bare by the trampling of the cattle, enables them to penetrate the earth with their bills.

Swamps or woods, with bottoms also of this kind, especially if covered with alder bushes or maple trees, are good places for hunting these birds; but into whatever

species of ground you enter, search well for the borings, or, as some term them, "spikings" in the ground. These, you are aware, are small holes, like worm holes, or rather of a triangular shape, sometimes in clusters, directed frequently at the foot of a tuft of grass or tussock, and made by the bird with its bill, while seeking for acorns beneath the surface of the ground. The object of this is argued by persons differently. Some say the bird lives by suction, that is, by some nutritive substance drawn from the earth by means of its bill; others, that the bird, being governed by the sense of touch alone, drives its bill into the ground and remains in that position until it feels the worm, when it is drawn forth and eaten; each of these positions may be partially correct; but my observation causes me to differ from both. There is no doubt, the sense of touch, hearing and sight, are all employed by the bird in the attainment of its food; perhaps the two former more frequently. The latter cannot avail, when the objects searched for by the bird, are placed beneath the surface of the ground.

The operation of boring, or spiking, is done by the bird, by sticking its bill with all its strength into the mud successively, and then a pause ensues for a few seconds, when the same action is repeated; during this employment, the bird half spreads its wings, and at every stroke of the bill, gets up and also spreads its tail considerably; now, it is evident, that the bird, by thus disturbing the ground, excites the earth worm to motion, which, perhaps, in its endeavours to escape, finds easier access to the holes made by the bill, and instead of escaping, ascends to the surface of the ground, and thus serves as a repast to the bird. The woodcock is no doubt greatly governed by hearing, and directs its efforts towards those parts where it hears the worm perforating the ground. This opinion, I think, is most reasonable, as we, who are more imperfect in that sense than many other animals, can hear insects boring various substances, especially the bottom of a ship, which is perforated by myriads of the minutest insects; this accuracy of hearing is one of the perfections, but not an absolutely necessary part of our nature; but with the bird in question, it becomes a necessary part of its nature, inasmuch as most of its food is sought after in the darkness and stillness of the night; and it appears to be endowed by Providence with that particular quality as is suited to its circumstances or habits. These borings indicate the presence of the bird, and I would advise you to hunt every spot well, when such occur. When you spring the bird in clear ground, a little deliberation on your part will ensure you a successful shot: for the bird is neither rapid in its flight, nor strong on the wing, and a very slight wound will bring it to the ground. Should a bird come towards you, always suffer it to pass before you shoot. Should you spring a bird in a thicket, you will observe it will always soar to the tops of the trees, unless the wood should be open. In this case, you must wait until they have risen to their highest point before you shoot, or you will probably miss your object.

In the fall season, woodcocks are seldom seen in meadows, or open land, except it should be newly cleared land of wet bottom; but in maple swamps, and bush land, they may sometimes be found in abundance; at this period it is truly a valuable bird, and a small number will compensate for a day's hunt; the finest bag of game the writer ever carried in one day, consisted of twenty-one woodcocks, killed in the early part of November, in a large swamp, within ten miles of Philadelphia. I have heard of some sportsmen killing four times as many in a single day, in the early part of the season, that is in July; but I would ask any epicure, whether my twenty-one birds killed in November, were not more valuable than four score killed in the summer. It is not the quantity, but the condition of the game which makes them valuable. In the latter instance, an unnecessary waste of life is occasioned, for not one-fourth of the quantity is ever used, and the satisfaction of bagging half a dozen of the splendid November birds, is greater than killing two dozen in July. Very small shot will kill these birds, say No. 9 or 10; but as you may encounter partridges also, I would advise you to use No. 8 in fall and winter, and in the summer, No. 9. A woodcock is a very nerveless bird for its size and appearance, although it sometimes happens, that when struck by shot, it will fly a long distance before it falls, and I have known them, even when mortally wounded, to move and settle as if unhurt; but it rarely occurs, if wounded, that it will ever take wing again; therefore, if you suppose you have struck the bird, you should follow its wake with caution, and you will stand a good chance to recover it, if wounded, without the necessity of shooting again. I have no doubt many birds have been lost by inattention to this point.

Snipe shooting is somewhat different and more difficult, as the shooter must hunt through mud and water continually; it is, however, more free from other obstructions, but it requires much skill to be successful. Snipes occur in abundance twice in the year; the first season is from the middle of March to that of April, and again during the latter part of October and beginning of November: these are the seasons for the middle states; but they are found much sooner in the year, and later in the fall, in the Carolinas and Georgia, and *vice versa* in the northern states. In the first instance, they are migrating north, and in the latter, returning south. They are poor on their first arrival in both seasons, but a few days rest on good

PINE FINCH. PURPLE FINCH.

From Nature on Stone by J.G. Clonney.

Moore's Lith. N.York

feeding ground will fatten them. The best period in the spring is at the time when the frogs are most noisy, and the grass beginning to grow, and they may be hunted either with or without dogs. If the weather is windy you must hunt with the wind, and when you spring a snipe it doubles immediately and flies by you, by which you will have a cross shot. In this kind of weather they are not so shy as in still weather, for in the latter they will frequently rise out of reach, especially if hunted much. You must at all times reserve your fire until the bird overcomes its zigzag flight, which it usually does within twenty yards; and by using fine shot, say No. 8 or 9, you will hardly fail to kill at that distance. The fall birds, however, I think are best; they are chiefly young, and of course tender; but in the spring they are all old, and being on their flight north to incubate, may be considered rather out of season. For further information on this head, I will refer the reader to pages 87 and 97 of Vol. I. of this work, under Woodcock and Snipe Shooting.

With the exception of the wild pigeon, I think there is no bird that describes so great a line of flight as the snipe; it penetrates the north so far to incubate, that no one can tell the precise place where it raises its young. "Who has ever seen a snipe's nest?" is an unanswered question often propounded, which leaves a mystery about the parental duties of the bird. Snipes are scattered not only over the whole continent of America, but throughout Europe and other parts of the world, and wherever there is civilization, they are objects of pursuit among sportsmen. In March, this bird is very abundant in the southern states of this country; the rice grounds are its delight, and at that time numbers may be found there, and it is not uncommon for those who shoot well, to kill from fifty to an hundred in a single day. In the middle and northern states they are not so plentiful, and the sportsmen of these places are contented with the success of bagging twenty or thirty in a day; there are parts, however, in which, at times, they are found in numbers, but the uncertainty even of those places affording much sport, renders it unnecessary now to point them out. I.

KANGUROO HUNTING.

The Kanguroo is naturally a timid animal, and flies at the approach of man. In New-Holland this creature is hunted with greyhounds, and affords an agreeable pastime to the settlers. It does not run like other quadrupeds, but progresses by quick, repeated bounds, of more than

twenty feet, and no obstacle of nine or ten feet can obstruct its flight, for it will leap over any object of that height with the greatest ease. It is hunted silently, for it has surprising quickness of hearing. When a dog finds his game, the chase begins, the Kanguroo hopping, and the dog running at his full speed; so that in a thickly-wooded country like New-Holland they are quickly out of view.

The following account of Kanguroo hunting is taken from Dawson's *Present State of Australia:*—

"The country on our right consisted of high hills, thickly timbered; that on the left, on the opposite side of the river, was a rich and thinly timbered country. A low and fertile flat meadow there skirted the river, and at the extremity of the flat the hills gradually arose with a gentle slope, covered with verdure, upon which an immense herd of Kanguroos was feeding. I crossed over with Maty Bill and a brace of dogs, leaving the party to proceed on their route. The moment we had crossed, the Kanguroos moved off. It is extremely curious to see the manner in which a large herd of these animals jump before you. It has often been asserted in England that they make use of their tails to spring from you when they are pursued: this is not correct. Their tails never touch the ground when they move, except when they are on their feed, or at play: and the faster they run or jump, the higher they carry them. The male Kanguroos were called, by the natives, old men, 'wool man;' and the females, young ladies, 'young liddy.' The males are not so swift as the females; and the natives, in wet seasons, occasionally run the former down when very large, their weight causing them to sink in the wet ground, and thus to become tired. They frequently, however, make up for this disadvantage, by fierceness and cunning, when attacked either by men or dogs; and it is exceedingly difficult for a brace of the best dogs to kill a 'corbon wool man.' When they can, they will hug a dog or a man as a bear would do; and as they are armed with long sharp claws, they not unfrequently let a dog's entrails out, or otherwise lacerate him in the most dreadful manner, sitting all the while on their haunches, hugging and scratching with determined fury. Young dogs, that are fierce and of good bottom, are almost sure to be sacrificed, if allowed to run at these 'old men,' before they have acquired some experience with smaller ones. After having been once or twice wounded, they get pretty cunning; and very few dogs will attack a 'wool man,' when they are away from their keepers: their practice is to keep the enemy at bay, by running round, and barking at him, till some persons come up, when, either with large sticks or pistols, and the aid of the dogs, he is finally despatched,

but not without some difficulty and caution. A full-sized 'wool man' at bay, always sits on his haunches, and when he rises to move forward, he stands four, or four and a half feet high. In this manner, he will, when pressed, meet a man, and hug and scratch him, if not to death, in such a way as he does not soon forget it. When hard pressed, and near to water, the Kanguroo always takes it; if it be deep water, and the dogs follow him, one or the other is almost sure to be drowned. If a single dog, the Kanguroo is nearly certain to come off victorious, by taking his assailant in his fore arms, and holding him under water till he is dead; but, if he has two dogs opposed to him, he is not left at liberty to hold either of his opponents long enough under water to drown him, and he generally himself falls a sacrifice, after a long and hard struggle. Notwithstanding the courage and ferocity of the Kanguroo, when pressed, he is otherwise extremely timid, and more easily domesticated than any wild animal with which I am acquainted. The smaller ones are frequently quite as swift as a hare; and I have sometimes seen them outstrip the fleetest dogs. The kind of dog used for coursing the Kanguroo is generally a cross between the greyhound and the mastiff, or sheep-dog; but in a climate like New South Wales, they have, to use the common phrase, too much lumber about them. The true-bred greyhound is the most useful dog; he has more wind; he ascends the hill with more ease, and will run double the number of courses in a day. He has more bottom in running, and, if he has less ferocity when he comes up with an 'old man,' so much the better, as he exposes himself the less, and lives to afford sport another day. The strongest and most courageous dog can seldom conquer a 'wool man' alone, and not one in fifty will face him fairly; the dog who has the temerity, is certain to be disabled, if not killed.

"The herd of Kanguroos we had thus come upon was too numerous to allow of the dogs being let loose; but, as the day's walk was drawing to a close, I had given Maty Bill liberty to catch another Kanguroo, if we should fall in with a single one. After moving up to the foot of a hill, about a quarter of a mile from the river, my sable companion eyed a 'corbon wool man,' as he called it, quietly feeding at a distance, on the slope of the hill. His eyes sparkled; he was all agitation: and he called out, 'Massa! massa! You tee! you tee! wool man, wool man! *corbon* wool man!' and off he ran with his dogs, till he was within a fair distance, when he slipped their collars. I was at this time on foot, and the whole of them, therefore, were soon out of my sight. They had turned round the bottom of the hill, in the direction of the river, and, as I was following them down, I heard the dogs at bay, and the shrill call of '*coo-oo-oo*,' from my companion, to direct me to the spot; and, on turning the corner of the hill, I met him, running, and calling as fast and as loud as he could. As soon as he saw me, he stopped and called out,—'Massa! massa! make haste; dingo, (dogs,) have got him in ribber. Many corbon wool man, all te same like it bullock.' All this was said in a breath; and as I could not pretend to run with him, I desired him to go as fast as he could, and help the dogs, till I should arrive. When I got up to the spot, he was in the middle of the river, with about two feet depth of water, while the Kanguroo, sitting upright on its haunches, was keeping both him and the dogs at a respectful distance, and had laid bare the windpipe of one of the dogs. Billy's Waddy was too short to reach him without coming to close quarters, and he knew better than to do that; at length he got behind him, and with a blow on the head, he despatched him. No huntsman could have shown more ardour in pursuit, or more pleasure at the death of a fox, than did poor Maty Bill upon this occasion. The Kanguroo was so heavy, weighing about a hundred and fifty pounds, that he could not lift him out of the water, and we were obliged to leave him till our party arrived on the opposite side. A fresh scene of pleasure ensued among the natives when they became acquainted with our good fortune. They were now all in the river, from whence they drew the 'wool man,' and placed him on the back of one of the horses. I wished to have left him, as we had already enough; but, as they were eager beyond every thing to take him, I indulged them. It appears that the natives have a great partiality for the flesh of the old and large Kanguroos, just as we have for mutton or venison of a proper age. I never could discover any difference in flavour; but, if they can partake of a 'wool man,' they refuse any other; and, when asked the reason, they replied to me, 'Wool man' budgeree (food) fatter. Black fellow like him always more better.'"

ON THE SCENT OF BIRDS.

A POWER is supposed to be exercised by birds in suppressing that peculiar odour, which enables the dog to scent them. Some of the occurrences of a day's sporting, have gone very far towards satisfying me that the theory is correct.

I was out with a companion, each of us having a dog. After traversing much ground, without success, our pointers nosed a covey of partridges, and we prepared for a shot; one of the birds upon "the extreme left," received

some of the contents of one of my barrels, and fell. I marked the spot, and in my anxiety to bag the little victim, proceeded directly to the place; my imagination rapidly sketching out the delight with which the fair lady, for whose service I intended my prize, would contemplate it about 9 o'clock, when nicely broiled, with plenty of fresh butter, and a little black pepper. And here let me hint to our young sportsmen, that (however much they may retrench in the article of supper, for the ladies, when they are managers of the public balls, and deem the fair sex too ethereal to eat any thing but jellies and syllabubs,) a present of a brace or two of game, is not unacceptable to the most sylph-like of their female friends. The way to tempt the appetite with a partridge, is to cook it as I have described, and flanked by a slice of bread and small plate of pickle, place it upon a waiter and send it in. But to return from this digression.

Although I marked the spot where my bird fell, I was unable to find it. I called my companion, and we called our dogs. For several minutes we kept the dogs "hie finding" upon a space about ten feet square, where the grass was long and silky, but at length they fairly gave it up. But my companion being of a persevering nature, refused to be baffled, and at length found the crippled bird hid in a tuft of grass.

Some time afterwards, we came across another covey, which was in a hedge. When the birds got up, we had each of us a shot, although on different sides of the hedge, and each one brought down his bird. I saw mine scramble into the hedge, and warned by the previous occurrence of the difficulty of finding the game, I put the dogs to work. They came to a stand. *The bird was dead.*

I got over the fence to assist my companion, who complained that he could not find his bird, although it was in a field with very short grass. We searched; the dogs smelt about, but in vain. After looking for a long time, I proposed to give it up, and was actually moving off, when by a mere accident, we discovered the little sufferer alive. The dogs must have passed nearly over him.

Having marked the spot where some of the birds put down, we moved forward to give them another unwelcome interruption. I had a fair shot, and finding my bird continue to fly, exclaimed, "mark that bird—he will not survive that shot." He put down in a marshy, reedy place, at least a hundred yards off. We proceeded leisurely onward, and found the bushes and briers pretty thick. The dogs stood at once. Upon examination *the bird was dead.*

If it be said, that our dogs were good for nothing, and therefore could not mark the crippled birds: I answer, they found them when dead; and I confess that the occurrences I have mentioned, could not well have been more strongly to the point, if the ground had been selected by way of experiment. In a field nearly open, they missed a living bird; in a close bushy place, they instantly found a dead one.—*American Turf Register.*

SLEEP OF ANIMALS DURING WINTER.

In the cold season nature being deprived of so many creatures, which rendered it beautiful and animated, appears dead. Most of the animals that have disappeared are buried in a profound sleep for the winter. This is the case, not only with snails, but bugs, ants, flies, spiders, caterpillars, frogs, lizards, and serpents. It is a mistake to suppose that the ants lay up provisions for the winter. The least cold numbs them, and they remain in that state till the return of spring. Of what use then would their stores be, since nature has prevented their requiring food in winter? What they collect in summer, with so much care, is not for their subsistence. They use it as materials to build their habitations. There are also many birds, who, when food begins to fail, hide themselves under ground, or in caves, to sleep all the winter. It is at least asserted, that, before winter, the shore-swallows hide under ground, the wall-swallows in the hollows of trees, or old buildings, and the common swallows go to the end of ponds, and fasten themselves in pairs to some reeds, where they remain lifeless and motionless till they are revived by the return of fine weather. There are also some beasts, which bury themselves in the ground at the end of summer. The most remarkable of them is the mountain-rat, which generally makes its abode in the Alps. Though it loves to be on the highest mountains, in the region of ice and snow, it is sooner numbed with cold than any other animal; for which reason, it retires about the end of September, or the beginning of October, into its subterraneous lodging, to remain there till April. There is much art and precaution in the plan of their winter-residence. It is a sort of gallery, the two branches of which have each their particular opening, and both terminate in a place without any, where they live. This dwelling place is lined with moss and hay. They make no provision for winter, as it would be useless to them. Before they enter their winter quarters, they prepare themselves each a bed of moss and hay; and then, having well closed the entrance into their houses, they compose themselves to sleep. As long as this state of insensibility lasts, they absolutely live without eating. At the beginning of winter, they are so fat, that some of them weigh

twenty pounds; but by degrees they fall away, and are very thin in spring. When these rats are discovered in their retreats, they are found rolled up round, and sunk into the hay. During their torpid state, they are carried away without being wakened, and they may even be killed without appearing to feel it. There is another sort of rats, whose sleep is as long and as sound as these, and are therefore called the sleepers. Bears eat prodigiously at the beginning of winter, as if they meant to eat enough at once for their whole lives. As they are naturally fat, and are excessively so at the end of autumn, this abundance of fat enables them to bear their abstinence during their winter's repose. The badgers prepare for their retreat into their burrows in the same manner. The instinct of these, and many other animals, teaches them thus to dispense with food for a considerable time.—*Sturm's Reflections.*

IVY.

Why is it that every one is pleased with the common Ivy? There is a charm about that plant which all feel, but none can tell why. Observe it hanging from the arch of some old bridge, and consider the degree of interest it gives to that object. The bridge itself may be beautifully situated; the stream passing through its arches clear and copious; but still it is the *Ivy* which gives the finish and picturesque effect. Mouldering towers, and castles, and ruined cloisters, interest our feelings in a great degree more or less by the circumstance of their being covered or not by the Ivy. Precipices, which else would exhibit only their naked barren walls, are clothed by it in a rich and beautiful vesture. Old trees, whose trunks it surrounds, assume a great variety of aspect; and, indeed, it is a most important agent in forming the beauty and variety of rural landscape. It is also as useful as it is beautiful; and among its uses I would include the very thing of which I am now speaking, for I have no idea that the forms and colours in nature please the eye by a sort of chance. If I admire the Ivy clinging to and surmounting some time-worn tower, and the various tints that diversify the parts of the ruin not hidden by it, I can only refer the pleasure I experience to the natural construction of the human mind, which the Almighty has formed to feel a pleasure in contemplating the external world around it. Who is insensible to the beauties of nature at the rising and setting of the summer's sun? Who can behold the moon-beams reflected from some silent river, lake, or sea, and not feel happy in the sight? None, I believe, in early life. When hardened in the ways of men—when the chief good pursued is the accumulation of wealth, the acquisition of power, or the pursuit of pleasure, so called—then mankind lose a sense of the beauties of nature; but never, perhaps, till then. A love for them is inherent in the mind, and almost always shows itself in youth; and if cherished at that period by education, would seldom be destroyed or become dormant in after life, as it now so generally is.

The Ivy is of vast advantage to the smaller birds, as it affords them shelter in winter, and a retreat for building their nests in spring and summer. It is in fructification in October and November; and the sweet juice which its flowers exude supports an infinity of insects in autumn, while its berries are a store of nutriment for many birds in the early spring. Along with other excellent observations relating to this plant, you will find the following in the "Journal of a Naturalist:"—"Those two extreme quarters of our year, autumn and spring, yield to most animals but a very slender and precarious supply of food; but the Ivy in those periods saves many from want and death; and the peculiar situations in which it prefers to flourish, are essential to the preservation of this supply, as in less sheltered ones it would be destroyed. In the month of October the Ivy blooms in profusion; and spreading over the warm side of some neglected wall, or the sunny bark of the broad ash on the bank, its flowers become a universal banquet to the insect race. The great black fly, and its numerous tribe, with multitudes of small winged creatures, resort to them; and there we see those beautiful animals, the latest birth of the year, the admiral and peacock butterflies, hanging with expanded wings like open flowers themselves, enjoying the sunny gleam, and feeding on the sweet liquor that distils from the nectary of this plant. As this honey is produced in succession by the early or latter expansion of the bud, it yields a constant supply of food till the frosts of November destroy the insects, or drive them to their winter retreats. Spring arrives; and in the bitter months of March, April, and even May, at times, when the wild products of the field are nearly consumed, the Ivy ripens its berries, and then almost entirely constitutes the food of the missel-thrush, wood-pigeon, and some other birds; and now these shy and wary birds, that commonly avoid the haunts of man, constrained by hunger, will approach our dwellings to feed upon the ripe berries of the Ivy. Now, too, the blackbird and the thrush resort to its cover, to conceal their nests. These early-building birds find little foliage at this period sufficient to hide their habitations; and did not the Ivy lend its aid to preserve them—and no great number are preserved—perhaps few nests would be hidden from the young eyes that seek them. The early

expansion of the catkins of the sallow, and others of the willow tribe, whence the bee extracts its first food, and the late blooming of the Ivy, are indispensable provisions for the existence of many of the insect race."

Now, only recollect how often you have seen the Ivy in October, and the bloom of the sallow in April, without ever asking yourself *why* the one flowered so late, and the other so early. This is another example of the want of attention paid to things with which people have always been accustomed. Were a tulip to blow in the open air in November, or a white lily in April, the whole country round would flock to the wonderful sight; but the thousand examples of Divine wisdom and arrangement that are daily passing before our eyes are neglected or despised.

Let us inquire, whether the tendency of Ivy to climb is a wise provision. If one great use of the plant in the economy of nature be the protection of animals, would the purpose not have been equally answered by an evergreen tree springing at once from the ground, and bearing branches like other trees? No; because the shelter afforded by Ivy, growing as it does around trunks, and on walls and rocks, is much more perfect and secure than could be attained, perhaps, in any other way. But a question arises: Does it injure those trees and walls to which it is attached? This I cannot answer from my own observation; but a very intelligent and observing friend has informed me, that he is in the practice of encouraging the growth of Ivy on his trees, and that he has no fear of its injuring them. This, however, is not proof sufficient. That it is not injurious to walls, I have had repeated assurance from persons who spoke from their own practical experience. When sufficiently old, so as to cover a wall, it protects it both from sun and rain; and do we not every where see, that the part of a ruin best preserved, is that which the Ivy covers? It may serve, too, as a substitute for a part which time has nearly removed, as was remarked to me by the friend above alluded to. "Had it not been for the Ivy," said he, "that summer house," (directing my attention to a little square building, of which scarcely a stone could be seen through its verdant envelope,) "would many years ago have been roofless and dilapidated; the Ivy has saved it from destruction."

Were the sight not so familiar, we should find some difficulty in conceiving how a plant of such large dimensions could climb up and adhere to a steep wall or rock. It does so by sending out a number of claws or root-like projections, which insinuate themselves into the pores of the body it ascends; and by them it is kept fixed. It appears that these claws keep their hold by swelling, so as completely to fill the pores; though some have thought that atmospheric pressure was the chief agent of adhesion.

Does the Ivy, you may ask, shoot out these claws at random? Not when it is of material consequence that they should proceed from one side only; and hence in the *young* Ivy we find that they shoot only from the side that is applied to the tree or wall. If you examine a young Ivy branch climbing up the smooth bark of a beech, you will find that its claws go out in great numbers from each side, and spread horizontally, and in tearing it off you will bring portions of the epidermis, or outer layer of the bark adhering to them. It is evident, that on a smooth bark this direction must be the most effectual in fixing them to the part, but if the latter be rough and chinky, then you will observe that the claws in general run perpendicularly into the fissures, and do not spread out sideways, which in this case would not be so effectual. When the Ivy is old enough to have a trunk, then the claws shoot out from the latter, and its larger branches on all sides, so as to render it rough and as if clothed in bristles; but we never see this in the young state.

Through the medium of these claws the Ivy ascends to a great height; it will mount the highest castle or tower, and wave triumphant on its summit; and yet, though it climbs the trunks of very high trees, we do not find that it ascends far upon the branches. If it did so it would injure the tree very materially, or destroy it, by choking its leaves. Have you ever remarked how the shape of the Ivy-leaf varies according to its situation? It differs greatly according to circumstances, and I apprehend that the variations are connected with a very curious and important part of the economy of the plant. The leaf of the young Ivy is pentangular, or five angled, and while the plant is climbing, it is almost invariably of this form. But if a branch project from the stem, and hang out free from the tree or wall, you will find that the leaves of such branch are ovate or lanceolate, and also, that on the branch itself there is no appearance of claws.

When an Ivy trunk has got fair possession of a wall, its branches diverge from it somewhat in manner of the spokes of a fan, and when they have reached the top of the wall they creep along it laterally, forming innumerable twistings and overlappings by which the whole are bound together in the strongest manner, and the branches which rise up and bear the flowers and fruit, are, in general, rather lateral ramifications than the continuations of the stem. They do not overtop the wall more than two or three feet, for the economy of the plant seems to be altered whenever it has got on so far as to stand no longer *in need of its claws*. Its whole powers then seem to bear on the ultimate object, the production of seeds, and when it is arrived at the top of the wall a higher elevation is unnecessary. It is the same circumstance, I believe, that

limits the growth of the plant, in a great measure, to the *trunk and part of the larger branches of the tree.* When it has got so high, the formation of claws and tendency to climb cease, and the branches produce flowers succeeded by berries. In the adhesion of Ivy to rocks and walls, the frequent overlapping of its branches serves most materially to strengthen its hold, and we observe innumerable young branches not climbing up in the direction of the parent trunks, but crossing and twining over them in all possible ways, transversely and obliquie, and tying them down as with strings or cords to the surface on which they are placed. This is still more evident in trees where we find the young shoots of the Ivy often forming rings round the trunks and thicker branches, like so many girths or braces. The intertwinings of the branches, and their serpentine direction, often bear a very exact resemblance to the distribution of blood-vessels in some parts of the animal body; and I have remarked a circumstance still more curious, that whenever the branches which cross each other have become as thick as one's little finger, they grow together at the points of contact, so as to become perfectly consolidated with each other. This is still more striking in the larger branches, and you will often, on observing the trunk of an Ivy bush, find that it is composed of a congeries of smaller stems which have all grown together into one mass, and formed what, without examination, would seem to be one simple uncompounded trunk.

[*Letters to a Young Naturalist.*

From the Library of Useful Knowledge.

THE VICES AND DISAGREEABLE OR DANGEROUS HABITS OF THE HORSE.

(*Concluded.*)

WIND-SUCKING.

This bears a close analogy to crib-biting. It arises from the same causes; the same purpose is accomplished; and the same results follow. The Horse stands with his neck bent; his head drawn inward; his lips alternately a little opened and then closed, and a noise is heard as if he were sucking. If we may judge from the same comparative want of condition, and the flatulence which we have described under the last head, either some portion of wind enters the stomach, or there is an injurious loss of saliva. This diminishes the value of the Horse almost as much as crib-biting; it is as contagious, and it is as inveterate. The only remedies, and they will seldom avail, are tying the head up, except when the Horse is feeding, or putting on a muzzle, with sharp spikes towards the neck, and which shall prick him whenever he attempts to rein his head in for the purpose of wind-sucking.

NOT LYING DOWN.

It not uncommonly happens that a Horse will seldom or never lie down in the stable. He sometimes continues in apparent good health, and feeds and works well; but generally his legs swell, or he becomes fatigued sooner than another Horse. If it is impossible to let him loose in the stable, or to put him into a spare box, we know not what is to be done. No means, gentle or cruel, will force him to lie down. The secret is that he is tied up, and either has never dared to lie down through fear of the confinement of the halter, or he has been cast in the night, and severely injured. If he can be suffered to range the stable, or have a comfortable box, in which he may be loose, he will usually lie down the first night. Some few Horses, however, will lie down in the stable, and not in a loose box. A fresh, well-made bed, will generallly tempt the tired Horse to lie down.

OVERREACH.

This unpleasant noise, known also by the terms "clicking," "overreach," &c., arises from the toe of the hind foot knocking against the shoe of the fore foot. In the trot, one fore leg and the opposite hind leg are first lifted from the ground and moved forward, the other fore leg and the opposite hind leg remaining fixed; but, to keep the centre of gravity within the base, and as the stride, or space passed over by these legs, is often greater than the distance between the fore and hind feet, it is necessary that the fore feet should be alternately moved out of the way for the hind feet to descend. Then, as occasionally happens with Horses not perfectly broken, and that have not been taught their paces, and especially if they have high hinder quarters and low fore ones, if the fore feet are not raised in time, the hind feet will strike them. The fore foot will generally be caught when it has just begun to be raised, and the toe of the hind foot will meet the middle of the bottom of the fore foot. It is a very disagreeable noise, and not altogether free from danger; for it may so happen that a Horse, the action of whose feet generally so much interferes with each other, may advance the hind foot a little more rapidly, or raise the fore one a little more slowly, so that the blow may fall on the heel of the shoe, and loosen or displace it; or the two shoes may be locked together, and the animal may be thrown; or the contusion may be received even higher, and on the

tendons of the leg, when considerable swelling and lameness may follow.

If the animal is young, the action of the Horse may be materially improved; otherwise, nothing can be done, except to keep the toe of the hind foot as short and as round as it can safely be, and to bevil off and round the toe of the shoe, like that which has been worn by a stumbler for a fortnight, and, perhaps, a little to lower the heel of the fore foot.

A blow received on the heel of the fore foot in this manner, has not unfrequently, and especially if neglected, been followed by quittor.

PAWING.

Some hot and irritable Horses are restless even in the stable, and paw frequently and violently. Their litter is destroyed, the floor of the stable broken up, the shoes worn out, the feet bruised, and the legs sometimes sprained. If this habit does not exist to any great extent, yet the stable never looks well. Shackles are the only remedy, with a chain sufficiently long to enable the Horse to shift his posture, or move in his stall; but even these must be taken off at night, otherwise the animal will seldom lie down.

QUIDDING.

A Horse will sometimes partly chew his hay, and suffer it to drop from his mouth. If this does not proceed from irregular teeth, which it will be the business of the veterinary surgeon to rasp down, it will be found to be connected with sore-throat, and then the Horse will exhibit some other symptom of indisposition, and the swallowing of water will be accompanied by a peculiar gulping effort. In this case the disease, (catarrh, with sore-throat,) must be attacked, and the quidding will cease.

ROLLING.

This is a very pleasant and perfectly safe amusement for a Horse at grass, but cannot be indulged in the stable, without the chance of his being dangerously entangled with the collar rein, and being cast. Yet, although the Horse is cast, and bruised, and half-strangled, he will roll again on the following night, and continue to do so as long as he lives. The only remedy is not a very pleasant one to the Horse, nor always quite safe; yet it must be had recourse to if the habit of rolling is inveterate. "The Horse," says Mr. Castley, in the *Veterinarian*, "should be tied with length enough of collar to lie down, but not to allow of his head resting on the ground; because, in order to roll over, a Horse is obliged to place his head quite down upon the ground."

SHYING.

This vice, while it is often the result of cowardice, or playfulness, or want of work, it is at other times the consequence of a defect of sight. It has been remarked, and we believe very truly, that shying is oftener a vice of half or quarter-bred Horses, than of those who have in them more of the genuine racing blood.

In the treatment of shying, it is of great importance to distinguish between that which is the consequence of defective sight, and that which results from fear, or newness of objects, or from mere affectation or skittishness. For the first, every allowance must be made, and care must be taken that the fear of correction be not associated with the imagined existence of some terrifying object. The severe use of the whip and the spur cannot do good here, and are likely to aggravate the vice tenfold. A word half encouraging and half scolding, with a gentle pressure of the heel, or a slight touch of the spur, will tell the Horse that there was nothing to fear, and will give him confidence in his rider on a future occasion. It should be remembered, however, that although a Horse that shies from defective sight may be taught considerable reliance on his rider, he can never have the cause of the habit removed. We may artificially strengthen the human sight, but the Horse's must be left to itself.

The shying from skittishness or affectation is quite a different affair, and must be conquered: but how? Severity is out of place even here. If he is forced up to the object by dint of correction, the dread of punishment will afterwards be associated with that object, and on the next occasion, his startings will be more frequent and more dangerous. The way to cure him is to go on, turning as little as possible out of the road, giving the animal a harsh word or two, and a gentle touch with the spur, and then taking no more notice of the matter. After a few times, whatever may have been the object which he chose to select as the pretended cause of affright, he will pass it almost without notice.

A colt may be cured of the habit of shying from fear or newness of objects; and if when "breaking in," he be accustomed as much as possible to the objects among which his services will be required, he will not possess this annoying vice when he grows to maturer age.

Mr. John Lawrence, in his pleasing work on the Horse, says, "These animals generally fix on some particular shying butt: for example, I recollect having, at different periods, three hacks, all very powerful; the one made choice of a wind-mill for the object or butt, the other a tilted wagon, and the last a pig led in a string. It so happened, however, that I rode the two former when amiss from a violent cold, and they then paid no more attention to either wind-mills or tilted wagons than to any other objects, convincing me that their shying when in health and spirits was pure affectation; an affectation, however, which may be speedily united with obstinacy and vice. Let it be treated with marked displeasure, mingled with gentle, but decided firmness, and the habit will be of short endurance."

Shying on coming out of the stable is a habit that can rarely or never be cured. It proceeds from the remembrance of some ill usage or hurt which the animal has received in the act of proceeding from the stable, such as striking his head against a low door-way, or entangling the harness. Coercion will but associate greater fear and more determined resistance with the old recollection. Mr. Castley, to whom we are indebted for much that is valuable on the subject of the vices of the Horse, gives an interesting anecdote, which tends to prove, that while severity will be worse than useless, even kind treatment will not break a confirmed habit. "I remember a very fine grey mare that had got into this habit, and never could be persuaded to go through a door-way without taking an immense jump. To avoid this, the servants used to back her in and out of the stable; but the mare happening to meet with a severe injury of the spine, was no longer able to back; and then I have seen the poor creature, when brought to the door, endeavouring to balance herself with a staggering motion upon her half-paralyzed hind extremities, as if making preparation and summoning up resolution for some great effort; and then, when urged, she would plunge headlong forward with such violence of exertion, as often to lose her feet, and tumble down, 'altogether most pitiable to be seen.' This I merely mention," he continues, "as one proof how inveterate the habits of Horses are. They are evils, let it always be remembered, more easy to prevent than cure."

SLIPPING THE COLLAR.

This is a trick at which many Horses are so clever, that scarcely a night passes without their getting loose. It is a very serious habit, for it enables the Horse sometimes to gorge himself with food, to the imminent danger of staggers; or it exposes him, as he wanders about, to be kicked and injured by the other Horses, while his restlessness will often keep the whole team awake. If the web of the halter, being first accurately fitted to his neck, is suffered to slip only one way, or a strap is attached to the halter and buckled round the neck, but not sufficiently tight to be of serious inconvenience, the power of slipping the collar will be taken away.

TRIPPING.

He must be a skilful practitioner or a mere pretender who promises to remedy this habit. If it arises from a heavy forehand, and the fore legs being too much under the Horse, no one can alter the natural frame of the beast: if it proceeds from tenderness of the foot, grogginess, or old lameness, these ailments are seldom cured; and if it is to be traced to habitual carelessness and idleness, no whipping will rouse the drone. A known stumbler should never be ridden or driven alone, by any one who values his safety or his life. A tight hand or a strong bearing-rein are precautions that should not be neglected, but they are generally of little avail; for the inveterate stumbler will rarely try to save himself, and this tight rein may sooner and farther precipitate the rider. If, after a trip, the Horse suddenly starts forward, and endeavours to break into a canter, the rider or driver may be assured that others before him have fruitlessly endeavoured to remedy this nuisance.

If the stumbler has the foot kept as short and the toe pared as close as safety will permit, and the shoe be rounded at the toe, or have that shape given to it which it naturally acquires in a fortnight from the action of such a Horse, the animal may not stumble quite so much; or if the disease which produced the habit can be alleviated, some trifling good may be done, but in almost every case a stumbler should be got rid of, or put to slow and heavy work. If the latter alternative be adopted, he may trip as much as he pleases, for the weight of the load and the motion of the other Horses will keep him upon his legs.

WEAVING.

This consists in a motion of the head, neck, and body, from side to side, like the shuttle of a weaver passing through the web, and hence the name which is given to this peculiar and incessant action. It indicates an impatient, irritable temper, and a dislike to the confinement of the stable; and a Horse that is thus incessantly on the fret will never carry flesh, or be safe to ride or drive. There is no cure for it, but the close tying up of the animal, except at feeding time.

BLACK WOLF.

THE BLACK WOLF.

CANIS NUBILUS.

(Plate XXIII. Vol. 2.)

Canis Lycaon; Linn. Shrel. *Saeugthiere, pl.* 89. Godman, *Vol.* 1. *p.* 267.—*Loup Noir;* Buff. 9. *pl.* 41. *Black Wolf:* Say *in Long's Expedition to the Rocky Mountains, p.* 102, *Vol.* 1.—Menagerie Living Animals exhibited in Philadelphia, winter of 1832—3.

There was, for some time, much doubt among naturalists, whether the Black Wolf should be considered a separate species, or only a variety of the common Wolf; but, on a close investigation of the internal and anatomical structure, habits and general appearance of the Black Wolf, it has become a settled question that it is a different animal altogether. Of the two animals belonging to the Zoological gardens of London, it is remarked, "that they exhibit real and substantial marks of distinction of sufficient value to sanction their separation from the other species—considerably longer and more robust than the common Wolf, and differing greatly in the expression of their physiognomy; neither in figure nor in countenance are they remarkable for that starved and gaunt appearance which is the common and well known attribute of the latter. In fact, they have altogether a more fierce and formidable, but, at the same time, a more noble and less sinister aspect.

"Their hair, which is of considerable length, especially along the middle of the back and shoulders, where it forms an indistinct and scattered mane, is mottled with various shades of black, grey and white, giving to the whole animal that dark and clouded colour which constitutes one of its most peculiar and striking characteristics. The colouring, which, on the upper parts of the body is deep black, becomes somewhat lighter on the sides, and assumes a yet brighter shade beneath: the chin and angles of the mouth are nearly white; the gray tinge predominating over the darker shades in various other parts, but by no means in so regular a manner as to merit a particular description. The ears are remarkably short, and the tail is also somewhat shorter in proportion than that of the common Wolf, not reaching in its solid form beneath the posterior bend (which, in all these animals, is formed by the heel) of the hind legs."

These animals, it appears, were sent to England by the Hudson's Bay Company, by some of whose hunters they had been trapped in the northern regions of America. They are represented as exceedingly voracious, tearing their meat and swallowing it in large gobbets, and afterwards gnawing the bones with truly wolfish avidity. "Their length is four feet and a quarter from the tip of the nose to the origin of the tail."

Dr. Godman, in describing the Black Wolf, says: "in general appearance and the relative proportions of the different parts of the body, this Wolf resembles the common wolf, (Canis Lupas,) but in size it is intermediate to the fox and common wolf. The colour of the animal is its most remarkable characteristic: it is entirely black, without the slightest admixture of any other colour."

Of these two descriptions of the Black Wolf, the writer considers the former the most correct, having, from actual observation, closely noticed the structure, habits and disposition of the animal, as far as a state of half domesticity would permit.

The animal from which the drawing in the preceding plate was taken, belongs to the celebrated Menagerie of living animals, exhibited in various parts of this country by Messrs. Welsh, Purdy & Co., and corresponds in most particulars with those belonging to the Zoological gardens of London. Dr. Godman, however, may be correct, (and I am inclined to think he is,) in regard to the colour of the animal being perfectly black, as long confinement and restraint on the natural habits of this Wolf, may have great influence in changing the pelage or its colour.

The Black Wolf appears to be confined chiefly to the Rocky Mountains, and the more northerly regions of America; it is, perhaps, the rarest of its genus, and but few specimens have ever been presented to public view, although almost every district of North America is infested with the other species.

The animal under immediate notice was brought by some traders, while yet a whelp, from the neighbourhood of the Rocky Mountains, to one of the towns on the Missouri, from thence it found its way to the Menagerie spoken of; but in consequence of much suffering by confinement, especially with the mange, it became necessary to remove it from the company of the other wild animals. This Wolf, although at times it evinced much ferocity, would generally suffer the writer to pet it, and would frequently lie down and crouch like a dog, and utter the same whining cry of humility; it was exceedingly active and graceful in every motion, and when irritated, would growl and snap with violence at any object intended to worry it, and when punished, would yelp like a dog; he was not gaunt, but fat, and very stately in his appearance, moving about with head and tail very erect. The fatness, however, in truth, proceeded from the abundance of food given it, without exertion on the animal's part to obtain it; and, being deprived of the necessity of seeking a sub-

sistence, by the means which its predatory habits naturally require, it no doubt, as in the case of those of the Zoological gardens, become very fat and subject to disease. This wolf is the same in habit as the other species; and the whole genus, besides being the greatest nightly depredators, will, during the season of darkness, remain longer on foot in a state of activity than all other animals; the consequence is, that being led by its exceeding desire for food, it will travel over extensive countries, and must, in the very nature of the case, be poor and gaunt.

It is designed to enter more particularly into the history and habits of the Wolf, when these become necessary under the head of The Brown Wolf, at which time every peculiarity of the animal will be given, with many illustrative anecdotes.

FLOCKS OF WILD PIGEONS.

The most remarkable characteristic of these birds is their associating together, both in their migrations, and also during the period of incubation, in such prodigious numbers as almost to surpass belief; and which has no parallel among any other of the feathered tribes, on the face of the earth, with which naturalists are acquainted.

These migrations appear to be undertaken rather in quest of food, than merely to avoid the cold of the climate, since we find them lingering in the northern regions around Hudson's Bay so late as December; and since their appearance is so casual and irregular; sometimes not visiting certain districts for several years in any considerable numbers, while at other times they are innumerable. I have witnessed these migrations in the Genessee country—often in Pennsylvania, and also in various parts of Virginia, with amazement; but all that I had then seen of them were mere straggling parties, when compared with the congregated millions which I have since beheld in our western forests, in the states of Ohio, Kentucky, and the Indiana territory. These fertile and extensive regions abound with the nutritious beech nut, which constitutes the chief food of the Wild Pigeon. In seasons when these nuts are abundant, corresponding multitudes of Pigeons may be confidently expected. It sometimes happens, that having consumed the whole produce of the beech trees in an extensive district, they discover another at the distance perhaps of sixty or eighty miles, to which they regularly repair every morning, and return as regularly in the course of the day, or in the evening, to their place of general rendezvous, or as it is usually called, the *roosting place*. These roosting places are always in the woods, and sometimes occupy a large extent of forest. When they have frequented one of these places for some time, the appearance it exhibits is surprising. The ground is covered to the depth of several inches with their dung; all the tender grass and underwood destroyed; the surface strewed with large limbs of trees broken down by the weight of the birds clustering one above another; and the trees themselves, for thousands of acres, killed as completely as if girdled with an axe. The marks of this desolation remain for many years on the spot; and numerous places could be pointed out, where, for several years after, scarce a single vegetable made its appearance.

When these roosts are first discovered, the inhabitants from considerable distances visit them in the night, with guns, clubs, long poles, pots of sulphur, and various other engines of destruction. In a few hours they fill many sacks, and load their horses with them. By the Indians, a Pigeon roost, or breeding place, is considered an important source of national profit and dependence for that season; and all their active ingenuity is exercised on the occasion. The *breeding place* differs from the former in its greater extent. In the western countries above mentioned, these are generally in beech woods, and often extend in nearly a straight line across the country for a great way. Not far from Shelbyville, in the state of Kentucky, about five years ago, there was one of these breeding places, which stretched through the woods in nearly a north and south direction, was several miles in breadth, and was said to be upwards of forty miles in extent! In this tract almost every tree was furnished with nests, wherever the branches could accommodate them. The Pigeons made their first appearance there about the 10th of April, and left it altogether, with their young, before the 25th of May.

As soon as the young were fully grown, and before they left the nests, numerous parties of the inhabitants, from all parts of the adjacent country, came with wagons, axes, beds, cooking utensils, many of them accompanied by the greater part of their families, and encamped for several days at this immense nursery. Several of them informed me, that the noise in the woods was so great as to terrify their horses, and that it was difficult for one person to hear another speak without bawling in his ear. The ground was strewed with broken limbs of trees, eggs, and squab Pigeons, which had been precipitated from above, and on which herds of hogs were fattening. Hawks, buzzards, and eagles, were sailing about in great numbers, and seizing the squabs from their nests at pleasure; while from twenty feet upwards to the tops of the trees the view through the woods presented a perpetual tumult of crowding and fluttering multitudes of Pigeons,

their wings roaring like thunder; mingled with the frequent crash of falling timber; for now the axe-men were at work cutting down those trees that seemed to be most crowded with nests; and contrived to fell them in such a manner, that in their descent they might bring down several others; by which means the falling of one large tree sometimes produced two hundred squabs, little inferior in size to the old ones, and almost one mass of fat. On some single trees upwards of one hundred nests were found, each containing *one* young only, a circumstance in the history of this bird not generally known to naturalists. It was dangerous to walk under these flying and fluttering millions, from the frequent fall of large branches, broken down by the weight of the multitudes above, and which in their descent often destroyed numbers of the birds themselves.

These circumstances were related to me by many of the most respectable part of the community in that quarter; and were confirmed in part by what I myself witnessed. I passed for several miles through this same breeding place, where every tree was spotted with nests, the remains of those above described. In many instances, I counted upwards of ninety nests on a single tree; but the Pigeons had abandoned this place for another, sixty or eighty miles off, towards Green River, where they were said at that time to be equally numerous. From the great numbers that were constantly passing over head, to or from that quarter, I had no doubt of the truth of this statement. The mast had been chiefly consumed in Kentucky, and the Pigeons, every morning, a little before sun-rise, set out for the Indiana territory, the nearest part of which was about sixty miles distant. Many of these returned before ten o'clock, and the great body generally appeared on their return a little after noon.

I had left the public road, to visit the remains of the breeding place near Shelbyville, and was traversing the woods with my gun, in my way to Frankfort, when about one o'clock, the Pigeons, which I had observed flying the greater part of the morning northerly, began to return in such immense numbers as I never before had witnessed. Coming to an opening by the side of a creek, called the Benson, where I had a more uninterrupted view, I was astonished at their appearance. They were flying with great steadiness and rapidity, at a height beyond gun-shot, in several strata deep, and so close together, that could shot have reached them, one discharge could not have failed of bringing down several individuals. From right to left, as far as the eye could reach, the breadth of this vast procession extended; seeming every where equally crowded. Curious to determine how long this appearance would continue, I took out my watch to note the time, and sat down to observe them. It was then half-past one. I sat for more than an hour, but instead of a diminution of this prodigious procession, it seemed rather to increase both in numbers and rapidity; and, anxious to reach Frankfort before night, I rose and went on. About four o'clock in the afternoon I crossed the Kentucky river, at the town of Frankfort, at which time the living torrent above my head seemed as numerous and as extensive as ever. Long after this I observed them, in large bodies that continued to pass for six or eight minutes, and these again were followed by other detached bodies, all moving in the same south-east direction, till after six in the evening. The great breadth of front which this mighty multitude preserved, would seem to intimate a corresponding breadth of their breeding place, which, by several gentlemen who had lately passed through part of it, was stated to me at *several* miles. It was said to be in Green county, and that the young began to fly about the middle of March. On the 17th of April, forty-nine miles beyond Danville, and not far from Green River, I crossed the same breeding place, where the nests for more than three miles spotted every tree; the leaves not being yet out, I had a fair prospect of them, and was really astonished at their numbers. A few bodies of Pigeons lingered yet in different parts of the woods, the roaring of whose wings were heard in various quarters around me.

All accounts agree in stating, that each nest contains only one young. This is so extremely fat, that the Indians, and many of the whites, are accustomed to melt down the fat for domestic purposes, as a substitute for butter and lard. At the time they leave the nest they are nearly as heavy as the old ones; but become much leaner after they are turned out to shift for themselves.

It is universally asserted in the western countries, that the Pigeons, though they have only one young at a time, breed thrice, and sometimes four times, in the same season; the circumstances already mentioned render this highly probable. It is also worthy of observation, that this takes place during that period when acorns, beech nuts, &c., are scattered about in the greatest abundance, and mellowed by the frost. But they are not confined to these alone; buckwheat, hempseed, Indian corn, holly berries, hack berries, huckle berries, and many others, furnish them with abundance at almost all seasons. The acorns of the live oak are also eagerly sought after by these birds, and rice has been frequently found in individuals killed many hundred miles to the northward of the nearest rice plantation. The vast quantity of mast which these multitudes consume, is a serious loss to the bears, pigs, squirrels, and other dependents on the fruits of the forest. I have taken from the crop of a single Wild

Pigeon, a good handful of the kernels of beech nuts, intermixed with acorns and chesnuts. To form a rough estimate of the daily consumption of one of these immense flocks, let us first attempt to calculate the numbers of that above mentioned, as seen in passing between Frankfort and the Indiana territory. If we suppose this column to have been one mile in breadth, (and I believe it to have been much more,) and that it moved at the rate of one mile in a minute; four hours, the time it continued passing, would make its whole length two hundred and forty miles. Again: supposing that each square yard of this moving body comprehended three Pigeons, the square yards in the whole space, multiplied by three, would give two thousand, two hundred and thirty millions, two hundred and seventy-two thousand Pigeons! An almost inconceivable multitude, and yet probably far below the actual amount. Computing each of these to consume half a pint of mast daily, the whole quantity at this rate, would equal seventeen millions, four hundred and twenty-four thousand bushels per day! Heaven has wisely and graciously given to these birds rapidity of flight, and a disposition to range over vast uncultivated tracts of the earth; otherwise they must have perished in the districts where they resided, or devoured up the whole productions of agriculture, as well as those of the forests.

A few observations on the mode of flight of these birds must not be omitted. The appearance of large detached bodies of them in the air, and the various evolutions they display, are strikingly picturesque and interesting. In descending the Ohio, by myself, in the month of February, I often rested on my oars to contemplate their aerial manœuvres. A column, eight or ten miles in length, would appear from Kentucky, high in air, steering across to Indiana. The leaders of this great body would sometimes gradually vary their course, until it formed a large bend of more than a mile in diameter, those behind tracing the exact route of their predecessors. This would continue sometimes long after both extremities were beyond the reach of sight, so that the whole, with its glittery undulations, marked a space on the face of the heavens resembling the windings of a vast and majestic river. When this bend became very great, the birds, as if sensible of the unnecessary circuitous course they were taking, suddenly changed their direction, so that what was in column before became an immense front, straightening all its indentures, until it swept the heavens in one vast and infinitely extended line. Other lesser bodies also united with each other, as they happened to approach, with such ease and elegance of evolution, forming new figures, and varying these as they united or separated, that I was never tired of contemplating them. Sometimes a hawk would make a sweep on a particular part of the column, from a great height, when almost as quick as lightning, that part shot downwards out of the common track, but soon rising again, continued advancing at the same height as before, this inflection was continued by those behind, who, on arriving at this point, dived down almost perpendicularly, to a great depth, and rising, followed the exact path of those that went before.

Happening to go ashore one charming afternoon, to purchase some milk at a house that stood near the river, and while talking with the people within doors, I was suddenly struck with astonishment at a loud rushing roar, succeeded by instant darkness, which, on the first moment, I took for a tornado about to overwhelm the house, and every thing around in destruction. The people, observing my surprise, coolly said, "It is only the Pigeons;" and on running out I beheld a flock, thirty or forty yards in width, sweeping along very low, between the house and the mountain, or height that formed the second bank of the river. These continued passing for more than a quarter of an hour, and at length varied their bearing so as to pass over the mountain, behind which they disappeared before the rear came up.

In the Atlantic states, though they never appear in such unparalleled multitudes, they are sometimes very numerous; and great havoc is then made amongst them with the gun, the clap-net, and various other implements of destruction. As soon as it is ascertained in a town that the Pigeons are flying numerously in the neighbourhood, the gunners rise *en masse*, the clap-nets are spread out on suitable situations, commonly on an open height, in an old buckwheat field; four or five live Pigeons, with their eyelids sowed up, are fastened on a moveable stick—a small hut of branches is fitted up for the fowler at the distance of forty or fifty yards; by the pulling of a string, the stick on which the Pigeons rest is alternately elevated and depressed, which produces a fluttering of their wings, similar to that of birds just alighting; this being perceived by the passing flocks, they descend with great rapidity, and finding corn, buckwheat, &c., strewed about, begin to feed, and are instantly, by the pulling of a cord, covered with the net. In this manner ten, twenty, and even thirty dozen, have been caught at one sweep. Meantime the air is darkened with large bodies of them, moving in various directions; the woods also swarm with them in search of acorns; and the thundering of musquetry is perpetual on all sides from morning to night. Wagon loads of them are poured into market, where they sell from fifty, to twenty-five, and even twelve cents per dozen; and Pigeons become the order of the day at dinner, breakfast and supper, until the very name becomes sickening.

When they have been kept alive, and fed for some time on corn and buckwheat, their flesh acquires great superiority; but in their common state they are dry and blackish, and far inferior to the full grown young ones, or squabs.

The young, when beginning to fly, confine themselves to the under part of the tall woods where there is no brush, and where nuts and acorns are abundant, searching among the leaves for mast, and appear like a prodigious torrent rolling along through the woods, every one striving to be in the front. Vast numbers of them are shot while in this situation. A person told me, that he once rode furiously into one of these rolling multitudes, and picked up thirteen Pigeons, which had been trampled to death by his horse's feet. In a few minutes they will beat the whole nuts from a tree with their wings; while all is scramble, both above and below, for the same. They have the same cooing notes common to domestic Pigeons; but much less of their gesticulations. In some flocks you will find nothing but young ones, which are easily distinguishable by their motley dress. In others they will be mostly females; and again great multitudes of males, with few or no females. I cannot account for this in any other way than that during the time of incubation the males are exclusively engaged in procuring food, both for themselves and their mates; and the young being unable yet to undertake these extensive excursions, associate together accordingly. But even in winter I know of several species of birds who separate in this manner, particularly the Red-winged Starling, among whom thousands of old males may be found, with few or no young, or females along with them.—Wilson.

BUILDING A NEST.

The romantic, though accurate naturalist, Vaillant, has given, in his "Oiseaux d'Afrique," the following lively narrative of the proceedings of a pair of small African birds in the construction of a nest. He had contrived, by tempting tit-bits, to render the species alluded to, which he calls the Capocier, so familiar, that a pair of these birds regularly entered his tent several times a day, and even seemed to recognise him in the adjacent thickets as he passed along. "The breeding season," he goes on, "had no sooner arrived, than I perceived the visits of my two little guests to become less frequent, though, whether they sought solitude the better to mature their plans, or whether, as the rains had ceased and insects became so abundant that my tit-bits were less relished, I cannot tell, but they seldom made their appearance for four or five successive days, after which they unexpectedly returned, and it was not long before I discovered the motives that had brought them back. During their former visits they had not failed to observe the cotton, moss, and flax which I used to stuff my birds with, and which were always lying upon my table. Finding it no doubt, much more convenient to come and furnish themselves with these articles there than to go and pick the down from the branches of plants, I saw them carry away in their beaks parcels of these, much larger in bulk than themselves.

"Having followed and watched them, I found the place which they had selected for constructing the cradle which should contain their infant progeny. In a corner of a retired and neglected garden, there grew, by the side of a small spring beneath the shelter of the only tree which ornamented that retreat, a high plant, called by the colonists of the Cape, *Capoc-bosche*. In this shrub they had already laid a part of the foundation with moss, the fork of the branches chosen for the reception of the nest being already bedded therewith. The first materials were laid on the 11th of October. The second day's labour presented a rude mass, about four inches in thickness, and from five to six inches in diameter. This was the foundation of the nest, which was composed of moss and flax, interwoven with grass and tufts of cotton.

"I passed the whole of the second day by the side of the nest, which the female never quitted from the moment my windows were opened in the morning till nearly ten o'clock, and from five o'clock in the evening till seven. On the morning of the 12th, the male made twenty-nine journies to my room, and in the evening only seventeen. He gave great assistance to the female in trampling down and pressing the cotton with his body, in order to make it into a sort of felt-work.

"When the male arrived with parcels of moss and cotton, he deposited his load either on the edge of the nest, or upon branches within the reach of the female. He made four or five trips of this kind without interruption, and then set about helping his mate in the execution of her work.

"This agreeable occupation was often interrupted by innocent and playful gambols, though the female appeared to be so actively and anxiously employed about her building, as to have less relish for trifling than the male; and she even punished him for his frolics by pecking him well with her beak. He, on the other hand, fought in his turn, pecked, pulled down the work which they had done, prevented the female from continuing her labours, and, in a word, seemed to tell her, 'You refuse to be my

playmate on account of this work, therefore you shall not do it!' It will scarcely be credited, that, entirely from what I saw and knew respecting these little altercations, I was both surprised and angry at the female. In order, however, to save the fabric from spoliation, she left off working, and fled from bush to bush, for the express purpose of teasing him. Soon afterwards, having made matters up again, the female returned to her labour, and the male sung during several minutes in the most animated strains. After his song was concluded he began again to occupy himself with the work, and with fresh ardour carried such materials as his companion required, till the spirit of frolic again became buoyant, and a scene similar to that which I have just described recurred. I have witnessed eight interruptions of this kind in one morning. How happy birds are! They are certainly the privileged creatures of nature, thus to work and sport alternately as fancy prompts them.

"On the third day the birds began to rear the side walls of the nest, after having rendered the bottom compact by repeatedly pressing the materials with their breasts, and turning themselves round upon them in all directions. They first formed a plain border, which they afterwards trimmed, and upon this they piled up tufts of cotton, which was felted into the structure by beating and pressing with their breasts and the shoulders of their wings, taking care to arrange any projecting corner with their beaks so as to interlace it into the tissue, and render it more firm. The contiguous branches of the bush were enveloped as the work proceeded in the side walls, but without deranging the circular cavity of the interior. This part of the nest required many materials, so that I was quite astonished at the quantity which they used.

"On the seventh day their task was finished; and anxious to examine the interior, I determined to introduce my finger, when I felt an egg that had probably been laid that morning, for on the previous evening I could see there was no egg in it, as it was not quite covered in. This beautiful edifice, which was as white as snow, was nine inches in height on the outside, whilst in the inside it was not more than five. Its external form was very irregular on account of the branches which it had been found necessary to enclose; but the inside exactly resembled a pullet's egg placed with the small end upwards. Its greatest diameter was five inches, and the smallest four. The entrance was two-thirds or more of the whole height, as seen on the outside; but within it almost reached the arch of the ceiling above.

"The interior of this nest was so neatly worked and felted together, that it might have been taken for a piece of fine cloth, a little worn, the tissue being so compact and close, that it would have been impossible to detach a particle of the materials without tearing the texture to pieces; yet was this only effected by the process which I have already described; and it must be confessed that it was a work truly admirable, considering the instruments of the little mechanics."

THE ADDER.

I ONCE met with a man who employed himself in summer in catching Adders, the fat of which he preserved and sold as a sovereign remedy for hurts and swellings, and some other parts of the animal went to the apothecaries to be used in their materia medica. This man in catching Adders used a forked stick and a shorter one. With the first he pinned the Adder to the ground, and killed it with the other. He was accompanied by a dog, who hunted for these animals, and who, when he had found one, contrived generally to seize it by the middle, and shake it with so much rapidity against the sides of his head, that not one Adder in a hundred had time to bite him before he killed it. His owner, however, informed me, that when this happened his head instantly swelled, but the swelling was almost as quickly removed by rubbing it with some of the fat of Adders, which he always carried about with him for the purpose. Twenty-five Adders yielded about half a pound weight of fat. They feed on worms, mice, frogs, and young birds; and before the winter sets in, would appear to quit the open downs, where they are found in summer, for the neighbouring woods, as a woodman told me, he had found near sixty of them clustered together in a torpid state, in grubbing up an old tree in the woods. They will however hybernize, (if I may use the word,) with the common snake and the slow worm, each of these having been found with some vipers in a torpid state, a short time ago. The viper-catcher whom I met with assured me that he had frequently seen the young vipers take refuge in the inside of their mother by running into her mouth, which she opens for that purpose when danger is apprehended. He also assured me that they are produced alive, the ova being hatched in the inside of the mother, from which they probably creep, as they must do at a more advanced state, after they have made it their place of refuge.* He also informed me, that

* The mode of parturition stated by the viper-catcher is generally supposed to be a vulgar error. He seemed, however, very confident that he was right. May not the viper, like the lizard, be ovo-viviparous? Some naturalists are of the same opinion as the viper-catcher mentioned, viz., that the eggs are hatched in the womb.

by letting vipers bite a piece of rag, and then suddenly snatching it from their mouth, he easily extracted the fangs, and that he then frequently put them between his shirt and skin, and brought them away alive.

Snakes are easily tamed, an instance of which is mentioned in Mr. White's Naturalists' Calendar; and there is a stuffed specimen of a snake now in the Zoological Museum, which, when alive, was perfectly tame, and had been eleven years in the possession of the gentleman who presented it to that society, and to whom it showed a strong attachment. Eton boys have always been great tamers of snakes, and many anecdotes are related by them of their attachment to their owners.

Snakes, unlike the viper, are oviparous, and their eggs are linked together in a sort of chain, and are each about as big as a large marble. They feed on frogs, mice, certain insects, and also young birds. It is supposed by some people that they destroy the eggs of partridges and pheasants; and for this reason many gamekeepers make a point of killing them. Snakes have sometimes been found on the branches of trees, where they have contrived to get in search of young birds. A person lately informed me that he had found one in that situation. A snake has been seen to swallow a newly-hatched chicken; and I once observed one in the act of attempting to swallow a full-grown frog. I was attracted to the spot by the cries of the latter, which were very loud and piteous. The snake made great efforts to get the frog down his throat, which he at last succeeded in doing. By trampling on a snake which has just swallowed a frog, the latter is easily ejected from the stomach of the former.

The fact of snakes annually casting their skin or slough is very curious. I have found the slough of one twisted amongst some young quicksets in a hedge-row, and appearing perfectly fresh. Shakspeare seems to have been aware of this.

"—— There the snake throws her enamell'd skin."
MIDS. NIGHT'S DREAM.

The circumstance of the slough being twisted in the way I found it amongst some twigs, seems to prove that the snake had not been able to rid himself of it without having recourse to something not very pliable which would assist him in the operation, although Mr. White says that he had found the slough in a field near a hedge. His account is very agreeable. He says, "About the middle of this month, (September,) we found in a field, near a hedge, the slough of a large snake, which seemed to have been newly cast. From circumstances it appeared to have been drawn off backward, like a stocking, or woman's glove. Not only the whole skin, but the scales from the very eyes, were peeled off, and appeared in the head of the slough like a pair of spectacles. The reptile, at the time of changing his coat, had entangled himself intricately in the grass and weeds; so that the friction of the stalks and blades might promote this curious shifting of his exuviæ.

"—— Lubrica serpens
Exuit in spinis vestem."—LUCRET.

It would be a most entertaining sight could a person be an eye-witness to such a feat, and see the snake in the act of changing his garment. As the convexity of the eyes in the slough is now inward, that circumstance alone is a proof that the skin has been turned; not to mention that now the present inside is much darker than the outer. If you look through the scales of the snake's eyes from the concave side, viz., as the reptile used them, they lessen objects much. Thus it appears, from what has been said, that snakes crawl out of the mouth of their own sloughs, and quit the tail part last, just as eels are skinned by a cookmaid. While the scales of the eyes are growing loose, and a new skin is forming, the creature in appearance must be blind, and feel itself in a very awkward and uneasy situation."—*Gleanings Nat. Hist.*

THE BEE.

"—— Where the Bee
Strays diligent, and with th' extracted balm
Of fragrant woodbine loads his little thigh."—THOMSON.

I HAVE some experiment hives which enable me very accurately to inspect the operations of my Bees. From the construction of the hives, the combs are necessarily built between two panes of glass, so that on drawing the sliders the two surfaces of a comb are exposed to view. In this way I am able to see almost every thing that is going forward.

When the Queen-Bee has an inclination to deposit her eggs, she goes forth, accompanied by six or eight working Bees as a guard, and whose stomachs are filled with honey. She is very deliberate in her motions, and seems to proceed with great caution. She first looks into a cell, and if she finds it perfectly empty, she draws up her long body, inserts her tail into the cell, and deposits an egg. In this way she slowly proceeds till she has dropped ten or twelve eggs, when perhaps feeling exhausted, she is fed by one of the attendant Bees, who have surrounded

her the whole time. This is done by the Bee ejecting the honey from its stomach into the mouth of the Queen. When this has been done the Bee goes away, and another takes its place. The operation of laying her eggs again goes on, and is succeeded by the same mode of feeding—the attendant Bees frequently touching the antennæ of the Queen with their own. When the operation of laying the eggs is completed—and it generally occupies some time—, the Queen retires to that part of the hive which is most filled with Bees. During her progress, the surface of the comb is very little intruded upon, and the space seems purposely to be left unoccupied. Some few of the cells, however, in a brood comb are passed over by the Queen, and are afterwards filled either with honey or farina. These serve as deposits of food, from which the neighbouring brood may be fed more readily, as such cells are never covered with wax.

With the hives referred to I have been able to follow many of Huber's experiments, and can bear witness to his general accuracy, except in regard to the fecundation of the Queen-Bee. I have bestowed much time and pains in endeavouring to discover any of the circumstances he mentions relating to this fact, but without success. Neither have I ever seen a cell visited by one of the drones *after* the egg had been deposited, which a modern writer has asserted they do. I have for many years watched my hives with the greatest care and assiduity, but have never yet seen the Queen-Bee leave the hive, except at the time of swarming. I have also spoken to several experienced Bee-masters on the subject, and they are of the same opinion with myself—that she never quits it. Her person is so easily distinguished from the other Bees, by any one at all conversant with them, that if the Queen absented herself from the hive, in the way Huber describes her as doing, it seems next to impossible that she should not have been perceived, either on her departure from, or on her return to the hive. It is, however, with considerable diffidence that one would venture to doubt the accuracy of any statement of Huber's, especially when the objection turns, not upon a contradictory circumstance, but upon what myself and others *have not been able to discover*.

Wax is a secretion formed under the scales of the back of the insect, from which I have repeatedly seen it exfoliate in small flakes. A considerable degree of heat appears to be necessary to produce this secretion, as I have always observed it most frequent in hot weather. Other writers have maintained that the wax is discharged from the abdominal rings or segments of the Bees. This may be also the case, but I have never perceived it.

The vision of Bees seems very imperfect. I have frequently turned a hive, so as to make the entrance about two or three inches from its former position, and have then always found the Bees at a loss to gain admittance. Indeed they seem more to *feel* their way than to see it, after they have once landed themselves on the board of their hives. Their progress through the air is always made in a direct line to the hive, and the instinct which enables them to find it, amongst forty or fifty others placed in a row, and nearly similar to each other, is very striking.

Mr. Rogers, in his "Pleasures of Memory," has a pretty idea on this subject:—

> "The varied scents that charm'd her as she flew,"

he thinks might point out the way of her return to the hive.

Wasps appear to have a better vision than Bees, though it is not easy to assign a reason for this being the case, since the construction of the eyes of both insects seems to be similar. Derham, in his Physico-theology, has observed in regard to the eye of the Bee and wasp, "that the cornea and optic nerves being always at one and the same distance, are fitted only to see distant objects, and not such as are very nigh, and that the eye will be found on examination to form a curious lattice-work of several thousand hexagonal lenses, each having a separate optic nerve ministering to it, and therefore to be considered as a distinct eye." Wasps, however, certainly seem to alight at the entrance of their nests with more accuracy than Bees. I have frequently observed this to be the case, even when the hole of a wasp's nest has been in a grass field, surrounded with long grass. They alight at it with the greatest precision, seldom or never going even half an inch either on one side or the other of it, and they do this even late in the evening.

A hive of Bees which have been once much exasperated, do not soon forget the injury. This was the case with one of my hives, the Bees of which never allowed me for two years to come near them while they were working, without attacking me, though a neighbouring hive would allow me to take almost any liberties with it with impunity. Indeed I had familiarized myself so much with some of my Bees, that I am convinced they knew me, and they always appeared to distinguish me from strangers. By constantly standing before the mouth of the hive, and allowing vast numbers to fly about and settle upon me, and by frequently feeding them, they became so well acquainted with me, that I had much pleasure in witnessing their attachment, and the confidence they placed in me. This affection was mutual, and I al-

ways think with pleasure of the many agreeable hours I have passed in company with my Bees. Those only can judge of this, who, like myself, have witnessed their assiduity, their internal labours, their affection for their Queen, and all the various modes they take in promoting the prosperity of the community. I always listen to the pleasing hum of Bees with delight, and know of few sounds more soothing and agreeable.

"Then, cheerful Bee, come, freely come,
And travel round my woodbine bower!
Delight me with thy wandering hum,
And rouse me from my musing hour;
Oh! try no more those tedious fields,
Come taste the sweets my garden yields:
The treasures of each blooming mine,
The bud—the blossom—all are thine."

In some papers published a few years ago, I endeavoured to point out the great cruelty of procuring honey by the suffocation of Bees, and the advantage which the Bee-owner would derive from contenting himself with a part only of their stores. This may be done by placing a small hive glass, or even a flowerpot, on the top of each hive in April or May. These should be of a size to hold about eight or ten pounds' weight of honey; and in a tolerably good season they will generally be filled, leaving a sufficient stock of honey for the Bees to subsist upon till the following spring. I am happy to find that this method is more generally practised than it formerly was. By adopting it, the lives of thousands of these industrious insects would be saved; the profits of the Bee-owner would be much more considerable, and his stock of Bees annually increased.

The summer of the year 1818, was unusually dry and hot, and in July flowers of almost every description had entirely disappeared. I observed that Bees, in consequence of this, seldom left their hives in search of honey, though the weather, one would have thought, would have tempted them out. They seemed, indeed, to be perfectly aware that their labours would be useless. I recollect meeting with an account of a hive of Bees being transported from a distant place, to a spot by the side of a mountain in Italy, where they could procure honey all the year round. Finding this to be the case, they soon gave up stocking their hive, and only went out to collect honey as they wanted it. The same observation has been made on Bees taken out to the West Indies, who the first year stored their hive as usual, and never afterwards, merely supplying themselves with food from day to day.

[*Ibid.*

THE MOLE.

——"Tread softly, that the blind Mole may not
Hear a foot fall; *we now are near his cell.*" SHAKSPEARE.

THE Mole-hills which we see in fields and meadows are thrown up by the Mole probably during its search for food. Little was known of the natural history of this animal, till a French naturalist, M. St. Hilaire, published lately some interesting particulars respecting it. The Mole forms several under-ground passages; and the way she proceeds in doing this is as follows:—she first makes a *run* in various directions, by undermining the ground, and unites this and several others at one point, making, however, some of them larger than the others. M. St. Hilaire says, that she finishes by arranging them with the most perfect symmetry, plastering the sides with great care; and when completed, it may be called her *encampment*. In the centre of these works she establishes herself, and appropriates a separate place to the reception of her young, which is in some respects differently constructed from her own. In order to render the respective habitations which she and her young occupy not liable to be injured by the rain, she makes them almost even with the ground, and higher up than the runs, which serve as drains, or channels, to carry off the water. She makes choice of the place of her abode with the greatest care, sometimes constructing it at the foot of a wall, or near a hedge or a tree, where it has the less chance of being broken in. This abode is sometimes protected by having a quantity of earth thrown over it, especially in light soils, where I have seen a mound almost large enough to fill a wheelbarrow. Sometimes, however, no earth is thrown up over the habitation. This precaution of the Mole is very necessary, to prevent the places she has chosen for retreats for herself and her young from being trampled in. When a Mole has occasion to make her run through a gateway, I have observed that she generally carries it as near as possible to the gate-post, where it is less likely to be injured. Some runs are so near the surface, that I have seen the ground crack during the animal's progress in working them. The bed for the young is composed of the blades of wheat, with which the Mole forms a sort of mattress. Four hundred and two of them were counted in one nest, and all so fresh in their appearance, that they had been probably collected by this animal in the course of two or three days. This shows not only her extraordinary industry, but the great depredation she must commit.

The Mole is never known to work for food near the place which she has fixed upon for her abode. She labours

to procure it about two hours in the morning, and as many in the evening, and then returns to her home or resting-place, which is so constructed, that she is instantly made aware of any danger. This effect is produced by forming the upper runs in a sort of circle, so as to communicate a vibration when any thing passes over them. The Mole then takes alarm, and escapes by one of her *safety* runs.

The Mole is not often seen on the surface of the earth. I once, however, caught one, and turned it loose upon a lawn, the turf of which was on a bed of strong gravel, and particularly hard and dry. Notwithstanding these disadvantages, the Mole contrived to bury itself almost in an instant, working into the earth by means of her snout and fins, (for they can hardly be called feet,) so fast, that the ground seemed to yield to her mere pressure.

The power of smelling in the mole is very acute; and it is supposed that this sense serves to direct her in the search of her food. She hunts after beetles and worms, which last she pursues eagerly, but not always successfully; for the earth-worm is aware of its danger, and quick in escaping from it. Her search for prey taking place in the morning and evening, when birds are more generally on their feed, must be the means of contributing greatly to their subsistence by driving worms to the surface of the earth, and furnishes another striking proof that the "fowls of the air" have their food provided by an Almighty and superintending Providence in a variety of ways.

Le Court, who assisted M. St. Hilaire in his observations, and who appears to have been a sort of philosophical Mole-catcher, was surprised when the naturalist expressed a doubt as to the Mole seeing. He informed him that, in swimming rivers, they habitually guide themselves by their sight; but, in order to satisfy M. St. Hilaire on this point, he contrived the following experiment with him:—They made two openings in a dry tiled drain, at one of which several Moles were successively introduced. Le Court took his stand at the other. If he stood quite still, the Mole soon came out and escaped; but if, at the moment in which she showed herself at the hole, he moved only his thumb, she stopped and turned back. By repeating this as often as she re-appeared, the Mole was kept imprisoned in the drain.

There has been a very general idea amongst our Mole-catchers, that if the smallest drop of blood is taken from a mole, it occasions instant death. Le Court seems to account for this opinion in speaking of the fights which take place between the male Moles, by saying, that if one is ever so slightly wounded in a vein near the ear, the wound is mortal.

In order to ascertain the rate at which a Mole moved, he put in practice the following curious experiment:—He placed some slight sticks, with a little flag at the top of them, in the run of a Mole, which he had previously ascertained by tracing it to be of considerable length, and along which the Mole passed and repassed four times a day in search of food. These sticks were placed at certain intervals in the run, so that if the Mole touched them, the flag would instantly show it. He then introduced a horn at one extremity of the run, and blowing it loudly, frightened the animal; and she then went along the run at such a rate, moving the flags in her passage, that Le Court and his friends, who were stationed at intervals along the run to assist in the observation, considered that she went as fast as a horse could trot at its greatest speed.

Hunger in the Mole is thought to be a more violent feeling than fear; and its appetite is singularly voracious. If it sees a bird near, it quits its hole—approaches as if to attack it; and if the bird pecks it, the Mole retires towards its hole, and tempts the bird to follow. She then watches her opportunity—darts upon it—seizes it by the belly, which she tears open, assisting herself for this purpose with her *flaps*, and, thrusting her head into it, devours it. She drinks as greedily as she eats. The Mole does not, like the mouse, lay up a store of food, as she preys on worms, and various kinds of insects: she will also eat frogs, but will not touch a toad if ever so hungry. A Mole was tried with eggs and oysters, but refused to eat either. They will, however, eat fruit, and, Buffon says, acorns. If two Moles are shut up together without food, the strongest will devour the weakest, even to the bones: nothing but the skin is left, which they never eat, and which, when one has killed the other, is always seen to be ripped up along the belly. It was found that ten or twelve hours was the longest time they could live without food. This fact seems to prove that the Mole is not torpid in frosty weather, which Linnæus asserted she was. It is known that, in such seasons, worms, ants, and the larvæ of cock-chafers and beetles, penetrate deep into the ground. It is probable, therefore, that the runs of the Mole made in search of food are regulated, as to their depth, by the habits of the grubs on which she feeds. One would suppose, from the texture of its fur, which is particularly short and thick, that the Mole is not very susceptible of cold. Indeed, its whole formation is admirably adapted to its mode of life.

It has been said, that the Mole, when the ground which it frequents is flooded, will climb up trees. This, however, seems to be unnecessary, as I have

seen it swim with perfect ease, which indeed Le Court had also observed.—*Ib.*

STUDY OF NATURE.

There is a principle in the human mind, which, of itself, if it be allowed fair play, obliges you to be impressed agreeably by the sight of a fine waterfall, the picturesqueness of an aged oak or time-worn ash, the shade of woods, the gurgle of streams, the sounds of the ocean wave, as it murmurs on shelving sands, or talks in thunder on rocks and precipices. These, and other general components of nature, have only to be seen or heard, that they may come home with power and effect to the mind. When I see a chain of mountains rearing their summits to the clouds, do I not immediately pronounce it to be a sublime object; and that, without any one idea intervening between the moment of sight and the moment of feeling? When a person for the first time beholds the ocean, is he not wrapt in astonishment, and awed by its grandeur, independently of any association of ideas? If to-day I admire the *beauty* of the cool, transparent, glassy flow of a river, and if tomorrow I behold it swollen to twenty times its usual magnitude, the water changed by a heavy night's rain to a dark brown colour, and the rolling flood dashing with incessant roar over "foamy steeps," or sweeping down its more level channel, boiling and flashing in its progress to the main, am I not *at once* impressed with the *sublimity* of the spectacle? or must I first think of flooded fields, or drowned cattle, or swept-away bridges, or undermined trees and banks? Surely not; the very first glance of the vexed torrent excites the feeling as instantaneously as a spark explodes gunpowder. I require no associations, no preparatory thinking; but a sentiment of sublimity and grandeur at the sight is at once called up, I know not how; but I am satisfied that it is neither artificial nor acquired. I believe the feeling of the sublime and beautiful in nature to be truly innate, and that its great value lies in its elevating our thoughts to the Deity himself. And how numerous are the lovers of general nature, in obedience to this innate feeling! How full of poetry, that language of heaven, is nature in all her amplitudes! and how indelibly rooted is the recollection of her scenes! how faithfully do they remain as they first fixed their impressure on the young mind! and how permanently do they continue to call up sensations of pleasure and delight!

"O nature! woods, winds, music, valleys, hills,
And gushing brooks!—in you there is a voice
Of potency—an utterance which instils
Light, life, and freshness, bidding man rejoice
As with a spirit's transport: from the noise,
The hum of busy towns, to you I fly:
Ye were my earliest nurses, my first choice—
Let me not idly hope, nor vainly sigh;
Whisper once more of peace—joys—years long vanished by."

But if the great features of nature be so impressive, how much is to be found in her minuter details when they come to be investigated. If a writer mention a forest, a cataract, a storm, a calm, a desert, or a paradise, and adapt his language to the object, all understand, and all are pleased, or delighted, or instructed, in proportion as he exhibits genius and truth. And when we examine the minuter parts of creation, they also can excite no little admiration, while they give a deeper, and more certain and solid knowledge of the power and goodness of God. The catalogue of the great features, too, is in comparison limited; while in the minuter departments, the number of organized beings, of geological, physiological, and other phenomena of the highest interest, are absolutely not to be numbered. And here there seems to me to be a wide and material distinction. The great forms of nature every one is impressed with from a constitutional innate feeling. The lesser are left to man himself to investigate, by his own research and the exercise of his understanding: they are innumerable; and we every where in them find an incomprehensible wisdom directing to certain useful ends, and unfolding a knowledge not only of the things, but of the mighty Being whose work they are. Let it not then be supposed, that the studying and collecting animal, vegetable, or mineral productions is a trifling occupation; for however general that opinion may be, it is as erroneous as it is vulgar.—*Letters to a Young Naturalist.*

SUBTERRANEOUS AND OMINOUS SOUNDS.

In a former volume of the Journal, we communicated some curious details in regard to what have been called *subterranean and ominous sounds.* Sir John Herschell has lately considered this subject, and conjectures that the noises of Nakoos, in Arabia, may be owing to a subterraneous production of steam, by the generation and condensation of which, under certain circumstances, sounds are well known to be produced. They belong to the same class of phenomena as the combustion of a jet of hydrogen gas in glass tubes. He also remarks, that wherever extensive subterraneous caverns exist, communicating with each other, or with the atmosphere, by

means of small orifices, considerable differences of temperature may occasion currents of air to pass through those apertures with sufficient velocity for producing sonorous vibrations. The sounds described by Humboldt, as heard at sunrise, by those who sleep on certain granitic rocks, on the banks of the Orinoco, may be explained on this principle. The sounds produced at sunrise, by the statue of Memnon, and the twang, like the breaking of a string, heard by the French naturalists to proceed from a granite mountain at Carnac, are viewed by him as referable to a different cause, viz. to pyrometric expansions and contractions of the heterogeneous material of which the statue and mountain consist. Similar sounds, and from the same cause, are emitted when heat is applied to any connected mass of machinery; and the snapping often heard in the bars of a grate affords a familiar example of this phenomenon. The following amusing account of an ominous sound is given by Gairdner in his book on the "Music of Nature:"—In one of the baronial castles of the north, which has been uninhabited for years, there were heard at times such extraordinary noises, as to confirm the opinion among the country people that the place was haunted. In the western tower an old couple were permitted to live, who had been in the service of the former lord, but so imbued were they with the superstitions of the country, that they never went to bed without expecting to hear the cries of the disturbed spirits of the mansion. An old story was current, that an heir-apparent had been murdered by an uncle, that he might possess the estate, who, however, after enjoying it for a time, was so annoyed by the sounds in the castle, that he retired with an uneasy conscience from the domain, and died in France. Not many years ago, the property descended to a branch of the female line, (one of the heroes of Waterloo,) who, nothing daunted, was determined to make this castle his place of residence. As the noises were a subject of real terror to his tenantry, he formed the resolution of sleeping in the castle on the night he took possession, in order to do away these superstitious fears. Not a habitable room could be found, except the one occupied by the old gardener and his wife in the western turret, and he ordered his camp-bed to be set up in that apartment. It was in the autumn, at nightfall, that he repaired to the gloomy abode, leaving his servant, to his no small comfort, at the village inn; and after having found every thing comfortably provided, turned the large old rusty key upon the antiquated pair, who took leave of him to lodge at a farm hard by. It was one of those nights which are chequered with occasional gleams of moonshine and darkness, when the clouds are riding in a high wind. He slept well for the two first hours; he was then wakened by a low mournful sound that ran through the apartments. This warned him to be up and accoutred. He descended the turret stairs with a brilliant light, which, on coming to the ground floor, cast a gigantic shadow of himself upon the high embattled walls. Here he stood and listened, when presently a hollow moan ran through the long corridor, and died away. This was followed by one of a higher key, a sort of scream, which directed his footsteps with more certainty to the spot. Pursuing the sounds, he found himself in the hall of his ancestors, and vaulting upon the large oaken table, set down his lamp, and folding his cloak about him, determined to wait for the appearance of all that was terrible. The night, which had been stormy, became suddenly still; the dark flitting clouds had sunk below the horizon, and the moon insinuated her silvery light through the chinks of the mouldering pile. As our hero had spent the morning in the chase, Morpheus came unbidden, and he fell asleep upon the table. His dream was short; for close upon him issued forth the horid groan; amazed, he started up and sprang at the unseen voice, fixing, with a powerful blow, his Toledo steel in the arras. The blade was fast, and held him to the spot. At this moment the moon shot a ray that illumined the hall, and showed that behind the waving folds there lay the cause concealed. His sword he left, and to the turret retraced his steps. When morning came, a welcome crowd greeting, asked if he had met the ghost? "O yes!" replied the knight, "dead as a door nail behind the screen he lies, where my sword has pinned him fast; bring the wrenching bar and we'll haul the disturber out." With such a leader, and broad day to boot, the valiant throng tore down the screen where the sword was fixed, when lo! in a recess, lay the fragments of a chapel organ, and the square wooden trunks made for hallowed sounds were used as props to stay the work when the hall was coated round with oak. The wondering clowns now laughed aloud at the mysterious voice. It was the northern blast that found its way through the crannies of the wall to the groaning pipes, that alarmed the country round for a century.—*Edin. Phil. Jour.*

OBESITY.

The celebrated *fat liver pies* of Strasburgh are made of the livers of geese, fattened with great attention. The animal is shut up in a cage, but little larger than its body, and is taken out but twice a day, and then to be fed with about a quart of crude peas. They are introduced with a finger into the pharynx of the animal, which is thus made

BELTED KING FISHER.

BUFFEL HEADED DUCK.

to swallow this enormous quantity of nourishment, and is then immediately shut up in its cage. The immediate result of this kind of life is a remarkable obesity, and an enormous development of the liver, which, without any notable change of structure, acquired a triple or quadruple enlargement of volume. Bibulous paper brought into close contact with this fat liver, immediately absorbs an oily matter, much like melted fat. These livers sometimes weigh eight or ten ounces, and sell at from three to five francs. The fattening of geese in this manner is a good speculation, for every part of the animal possesses an intrinsic value; the fat on many occasions is a substitute for butter, and the flesh is served at table, and although somewhat tough, is not the less nutritious; the feathers are much sought after, the quills serve for writing, and even the excrements sell at a high price as one of the richest of manures.—*Ib.*

BELTED KINGSFISHER.

ALCEDO ALCYON.

[Plate XXIV. Vol. 2.]

Bartram, *p.* 289.—Turton, *p.* 278.—*Alcedo Alcyon*, Linn. *Syst. ed.* 10, *vol.* I. 115.—Gmel. *Syst.* I. 451.—Lath. *Ind. Orn.* 257.—Catesby, I. 60.—Buff. *Pl. Enl.* 593—715.—J. Doughty's Collection.

This is a general inhabitant of the banks and shores of all our fresh-water rivers, from Hudson's Bay to Mexico; and is the only species of its tribe found within the United States. This last circumstance, and its characteristic appearance, make it as universally known here, as its elegant little brother, the common Kingsfisher of Europe, is in Britain. Like the love-lorn swains, of whom poets tell us, he delights in murmuring streams and falling waters; not, however, merely that they may soothe his ear, but for a gratification more substantial. Amidst the roar of the cataract, or over the foam of a torrent, he sits perched upon an overhanging bough, glancing his piercing eye in every direction below for his scaly prey, which, with a sudden circular plunge, he sweeps from their native element, and swallows in an instant. His voice, which is not unlike the twirling of a watchman's rattle, is naturally loud, harsh, and sudden; but is softened by the sound of the brawling streams and cascades among which he generally rambles. He courses along the windings of the brook or river, at a small height above the surface, sometimes suspending himself by the rapid action of his wings, like certain species of hawks, ready to pounce on the fry below; now and then settling on an old dead overhanging limb to reconnoitre. Mill-dams are particularly visited by this feathered fisher; and the sound of his pipe is as well known to the miller as the rattling of his own hopper. Rapid streams, with high perpendicular banks, particularly if they be of a hard clayey or sandy nature, are also favourite places of resort for this bird; not only because in such places the small fish are more exposed to view, but because those steep and dry banks are the chosen situations for his nest. Into these he digs with bill and claws, horizontally, sometimes to the extent of four or five feet, at the distance of a foot or two from the surface. The few materials he takes in are not always placed at the extremity of the hole, that he and his mate may have room to turn with convenience. The eggs are five, pure white, and the first brood usually comes out about the beginning of June, and sometimes sooner, according to that part of the country where they reside. On the shores of Kentucky river, near the town of Frankfort, I found the female sitting early in April. They are very tenacious of their haunts, breeding for several successive years in the same hole, and do not readily forsake it, even though it be visited. An intelligent young gentleman informed me, that having found where a Kingsfisher built, he took away its eggs, from time to time, leaving always one behind, until he had taken no less than eighteen from the same nest. At some of these visits, the female being within, retired to the extremity of the hole while he withdrew the egg, and next day, when he returned, he found she had laid again as usual.

The fabulous stories related by the ancients of the nest, manner of hatching, &c., of the Kingsfisher, are too trifling to be repeated here. Over the winds and the waves the humble Kingsfisher of our days, at least, the species now before us, has no control. Its nest is neither constructed of glue nor fish-bones; but of loose grass and a few feathers. It is not thrown on the surface of the water to float about, with its proprietor, at random; but snugly secured from the winds and the weather in the recesses of the earth; neither is its head or its feathers believed, even by the most illiterate of our clowns or seamen, to be a charm for love, a protection against witchcraft, or a security for fair weather. It is neither venerated like those of the Society isles, nor dreaded like those of some other countries; but is considered merely as a bird that feeds on fish; is generally fat; relished by *some* as good eating; and is now and then seen exposed for sale in our markets.

Though the Kingsfisher generally remains with us, in Pennsylvania, until the commencement of cold weather,

it is seldom seen here in winter; but returns to us early in April. In North and South Carolina, I observed numbers of these birds in the months of February and March. I also frequently noticed them on the shores of the Ohio, in February, as high up as the mouth of the Muskingum.

I suspect this bird to be a native of the Bahama islands, as well as of our continent. In passing between these isles and the Florida shore, in the month of July, a Kingsfisher flew several times round our ship, and afterwards shot off to the south.*

The length of this species is twelve inches and a half, extent twenty; back and whole upper parts a light bluish slate colour; round the neck is a collar of pure white, which reaches before to the chin; head large, crested, the feathers long and narrow, black in the centre, and generally erect; the shafts of all the feathers, except the white plumage, are black; belly and vent white; sides under the wings variegated with blue; round the upper part of the breast passes a band of blue, interspersed with some light brown feathers; before the eye is a small spot of white, and another immediately below it; the bill is three inches long, from the point to the slit of the mouth, strong, sharp pointed, and black, except near the base of the lower mandible, and at the tip, where it is of a horn colour; primaries, and interior webs of the secondaries, black, spotted with white; the interior vanes of the tail feathers elegantly spotted with white on a jet black ground; lower side light coloured; exterior vanes blue; wing-coverts and secondaries marked with small specks of white; legs extremely short; when the bird perches it generally rests on the lower side of the second joint, which is thereby thick and callous; claws stout and black; whole leg of a dirty yellowish colour; above the knee bare of feathers for half an inch; the two exterior toes united together for nearly their whole length.

The female is sprinkled all over with specks of white; the band of blue around the upper part of the breast is nearly half reddish brown; and a little below this passes a band of bright reddish bay, spreading on each side under the wings. The blue and rufous feathers on the breast are strong like scales. The head is also of a much darker blue than the back; and the white feathers on the chin and throat of an exquisite fine glossy texture, like the most beautiful satin.—Wilson.

* On the 25th of April last, a like circumstance occurred. While a passenger in the Brig General Sumter, from Charleston to Norfolk, lat. 35 long. 76, I noticed a Kingfisher settle on the end of the flying gib-boom of the brig, where it remained about ten minutes, and then took its departure to the eastward with the same quietness as when it came.—Ed.

BUFFEL-HEADED DUCK.

ANAS ALBEOLA.

[Plate XXIV. Vol. 2.]

La Sarcelle de la Louisiane, Briss. vi. *p.* 461, *pl.* 41, *fig.* 1.—*Le petit Canard à grosse tête*, Buff. ix. *p.* 249.—Edw. *pl.* 100.—*Arct. Zool. No.* 487.—Catesby, i. 95.—Lath. *Syn.* iii. *p.* 533.—*Le Canard d'hyver*, Briss. vi. *p.* 349; *La sarcelle de la Caroline, Id. p.* 464.—J. Doughty's Collection.

This pretty little species, usually known by the name of the *Butter-box*, or *Butter-ball*, is common to the seashores, rivers and lakes of the United States, in every quarter of the country, during autumn and winter. About the middle of April, or early in May, they retire to the north to breed. They are dexterous divers, and fly with extraordinary velocity. So early as the latter part of February the males are observed to have violent disputes for the females; at this time they are more commonly seen in flocks; but during the preceding part of winter they usually fly in pairs. Their note is a short *quack*. They feed much on shell fish, shrimps, &c. They are sometimes exceedingly fat; though their flesh is inferior to many others for the table. The male exceeds the female in size, and greatly in beauty of plumage.

The Buffel-headed Duck, or rather as it has originally been, the *Buffalo-headed* Duck, from the disproportionate size of its head, is fourteen inches long, and twenty-three inches in extent; the bill is short, and of a light blue or leaden colour; the plumage of the head and half of the neck is thick, long and velvetty, projecting greatly over the lower part of the neck; this plumage on the forehead and nape is rich glossy green changing into a shining purple on the crown and sides of the neck; from the eyes backward passes a broad band of pure white; iris of the eye dark; back, wings, and part of the scapulars, black; rest of the scapulars, lateral band along the wing, and whole breast, snowy white; belly, vent, and tail coverts, dusky white, tail pointed, and of a hoary colour.

The female is considerably less than the male, and entirely destitute of the tumid plumage of the head; the head, neck, and upper parts of the body and wings, are sooty black, darkest on the crown; side of the head marked with a small oblong spot of white, bill dusky; lower part of the neck ash, tipt with white; belly dull white; vent cinerous; outer edges of six of the secondaries and their incumbent coverts, white, except the tips of the latter, which are black; legs and feet a livid blue;

tail hoary brown; length of the intestines three feet six inches; stomach filled with small shell fish. This is the Spirit Duck of Pennant, so called from its dexterity in diving, (Arct. Zool. No. 487,) likewise the Little Brown Duck of Catesby, (Nat. Hist. Car. pl. 98.)

This species is said to come into Hudson's Bay about Severn River in June, and make their nests in trees in the woods near ponds. The young males during the first year are almost exactly like the females in colour.—*Ib.*

WILD ANIMALS IN THE ILLINOIS COUNTRY.

The *buffalo* has entirely left us. Before the country was settled, immense prairies afforded pasturage to large herds of this animal, and the traces of them are still remaining in the "buffalo paths," which are to be seen in several parts of the state. These are well beaten tracts, leading generally from the prairies in the interior of the state, to the margins of the large rivers; showing the course of their migrations as they changed their pastures periodically from the low marshy alluvium to the dry upland plains. In the heat of summer they would be driven from the latter by the prairie flies; in the autumn they would be expelled from the former by the mosquitoes; in the spring the grass of the plains would afford abundant pasturage, while the herds could enjoy the warmth of the sun, and snuff the breeze that sweeps so freely over them; in the winter, the rich cane on the river banks, which is an evergreen, would furnish food, while the low grounds, thickly covered with brush and forest, would afford protection from the bleak winds. I know few subjects more interesting than the migration of wild animals, connecting, as it does, the singular display of brute instinct, with a wonderful exhibition of the various supplies which nature has supplied for the support of animal life, under an endless variety of circumstances. These paths are narrow, and remarkably direct, showing that the animals travelled in single file through the woods, and pursued the most direct course to their places of destination.—— *Deer* are more abundant than at the first settlement of the country. They increase to a certain extent, with the population. The reason of this appears to be, that they find protection in the neighbourhood of man, from the beasts of prey that assail them in the wilderness, and from whose attacks, their young particularly can with difficulty escape. They suffer most from the wolves, who hunt in packs like hounds, and who seldom give up the chase until a deer is taken. We have often sat, on a moonlight summer night, at the door of a log-cabin on one of our prairies, and heard the wolves in full chase of a deer, yelling very nearly in the same manner as a pack of hounds. Sometimes the cry would be heard at a great distance over the plain; then it would die away, and again be distinguished at a nearer point, and in another direction; now the full cry would burst upon us from a neighbouring thicket, and we would almost hear the sobs of the exhausted deer; and again it would be born away, and lost in the distance. We have passed nearly whole nights in listening to such sounds; and once we saw a deer dash through the yard, and immediately pass the door at which we sat, followed by his audacious pursuers, who were but a few yards in his rear. Immense numbers of deer are killed every year by our hunters, who take them for their hams and skins alone, throwing away the rest of the carcass. Venison hams and hides are important articles of export: the former are purchased from the hunters at 25 cents a pair, the latter at 20 cents a pound. In our villages we purchase for our tables the saddle of venison, with the hams attached, for 37½ cents, which would be something like one cent a pound. There are several ways of hunting deer, all of which are equally simple. Most generally the hunter proceeds to the woods on horseback, in the day-time, selecting particularly certain hours, which are thought to be most favourable. It is said, that during the season when the pastures are green, this animal rises from his lair precisely at the rising of the moon, whether in the day or night; and I suppose the fact to be so, because such is the testimony of experienced hunters. If it be true, it is certainly a curious display of animal instinct. This hour is therefore always kept in view by the hunter, as he rides slowly through the forest, with his rifle on his shoulder, while his keen eye penetrates the surrounding shades. On beholding a deer, the hunter slides from his horse, and, while the deer is observing the latter, creeps upon him, keeping the largest trees between himself and the object of pursuit, until he gets near enough to fire. An expert woodsman seldom fails to hit his game. It is extremely dangerous to approach a wounded deer. Timid and harmless as this animal is, at other times, he no sooner finds himself deprived of the power of flight, than he becomes furious, and rushes upon his enemy, making desperate plunges with his sharp horns, and striking and trampling furiously with his fore-legs, which, being extremely muscular, and armed with sharp hoofs, are capable of inflicting very severe wounds. Aware of this circumstance, the hunter approaches him with caution, and either secures his prey by a second shot, where the first has been but partially successful, or, as is more frequently the case, causes his dog to seize the wounded animal, while he watches his own opportunity to stab him

with his hunting-knife. Sometimes where a noble buck is the victim, and the hunter is impatient or inexperienced, terrible conflicts ensue on such occasions. Another mode, is to watch at night, in the neighbourhood of the salt-licks. These are spots where the earth is impregnated with saline particles, or where the salt-water oozes through the soil. Deer and other grazing animals frequent such places, and remain for hours licking the earth. The hunter secretes himself here, either in the thick top of a tree, or most generally in a screen erected for the purpose, and artfully concealed, like a mask battery, with logs or green boughs. This practice is pursued only in the summer, or early in the autumn, in cloudless nights, when the moon shines brilliantly, and objects may be readily discovered. At the rising of the moon, or shortly after, the deer having risen from their beds, approach the lick. Such places are generally denuded of timber, but surrounded by it; and as the animal is about to emerge from the shade into the clear moon-light, he stops, looks cautiously around, and snuffs the air. Then he advances a few steps, and stops again, smells the ground, or raises his expanded nostrils, as if he "snuffed the approach of danger in every tainted breeze." The hunter sits motionless, and most breathless, waiting until the animal shall get within rifle-shot, and until its position, in relation to the hunter and the light, shall be favourable, when he fires with an unerring aim. A few deer only can be thus taken in one night, and after a few nights these timorous animals are driven from the haunts which are thus disturbed. Another practice is called *driving*, and is only practised in those parts of the country where this kind of game is scarce, and where hunting is pursued as an amusement. A large party is made up, and the hunters ride forth with their dogs. The hunting ground is selected, and, as it is pretty well known what tracks are usually taken by the deer when started, an individual is placed at each of those passages, to intercept the retreating animal. The scene of action being, in some measure, surrounded, small parties advance with the dogs from different directions, and the startled deer, in flying, most generally pass some of the persons who are concealed, and who fire at them as they pass. The *elk* has disappeared. A few have been seen of late years, and some taken; but it is not known that any remain at this time, within the limits of the state.—The *bear* is seldom seen. This animal inhabits those parts of the country that are thickly wooded, and delights particularly in cane-brakes, where it feeds in the winter on the tender shoots of the young cane. The meat is tender and finely flavoured, and is esteemed a great delicacy. *Wolves* are very numerous in every part of the state. There are two kinds: the common or black wolf, and the prairie wolf. The former is a large fierce animal, and very destructive to sheep, pigs, calves, poultry, and even young colts. They hunt in large packs, and after using every stratagem to circumvent their prey, attack it with remarkable ferocity. Like the Indian, they always endeavour to surprise their victim, and strike the mortal blow without exposing themselves to danger. They seldom attack man except when asleep or wounded. The largest animals, when wounded, entangled, or otherwise disabled, become their prey, but in general they only attack such as are incapable of resistance. They have been known to lie in wait upon the bank of a stream, which the buffaloes were in the habit of crossing, and, when one of those unwieldy animals was so unfortunate as to sink in the mire, spring suddenly upon it, and worry it to death, while thus disabled from resistance. Their most common prey is the deer, which they hunt regularly; but all defenceless animals are alike acceptable to their ravenous appetites. When tempted by hunger, they approach the farm-houses in the night, and snatch their prey from under the very eye of the farmer; and when the latter is absent with his dogs, the wolf is sometimes seen by the females lurking about in mid-day, as if aware of the unprotected state of the family. Our heroic females have sometimes shot them under such circumstances. The smell of burning assafœtida has a remarkable effect upon this animal. If a fire be made in the woods, and a portion of this drug thrown into it, so as to saturate the atmosphere with the odour, the wolves, if any are within reach of the scent, immediately assemble around, howling in the most mournful manner; and such is the remarkable fascination under which they seem to labour, that they will often suffer themselves to be shot down rather than quit the spot. Of the very few instances of their attacking human beings of which we have heard, the following may serve to give some idea of their habits: In very early times, a negro man was passing in the night, in the lower part of Kentucky, from one settlement to another. The distance was several miles, and the country over which he travelled entirely unsettled. In the morning his carcass was found entirely stript of flesh. Near it lay his axe, covered with blood, and all around, the bushes were beat down, the ground trodden, and the number of foot-tracks so great, as to show that the unfortunate victim had fought long and manfully. On pursuing his track, it appeared that the wolves had pursued him for a considerable distance; he had often turned upon them and driven them back. Several times they had attacked him, and been repelled, as appeared by the blood and tracks. He had killed some of them before the final onset, and in the last con-

flict had destroyed several; his axe was his only weapon. The *prairie-wolf* is a smaller species, which takes its name from its habits, or residing entirely upon the open plains. Even when hunted with dogs, it will make circuit after circuit round the prairie, carefully avoiding the forest, or only dashing into it occasionally when hard pressed, and then returning to the plain. In size and appearance this animal is midway between the wolf and the fox, and in colour it resembles the latter, being of a very light red. It preys upon poultry, rabbits, young pigs, calves, &c. The most friendly relations subsist between this animal and the common wolf, and they constantly hunt in packs together. Nothing is more common than to see a large black wolf in company with several prairie-wolves. I am well satisfied that the latter is the jackal of Asia. Several years ago, an agricultural society, which was established at the seat of government, offered a large premium to the person who should kill the greatest number of wolves in one year. The legislature at the same time offered a bounty for each wolf-scalp that should be taken. The consequence was, that the expenditure for wolf-scalps became so great, as to render it necessary to repeal the law. These animals, although still numerous and troublesome to the farmer, are greatly decreased in number, and are no longer dangerous to man. We know of no instance in late years of a human being having been attacked by them.—*Journal of Geology.*

THE WILD BOAR OF GERMANY.

The Wild Boar of Germany, though pursued as an object of sport, is fierce and powerful, active, cunning, and courageous, and both tact and activity as well as the steed, the rifle, and the hound are necessary to secure the hunter's safety and success in the chase.

When the Boar is found, and the Germans have dogs regularly trained to that duty, "ugly useful animals, not unlike a shepherd's dog, but rather smaller," called, in the language of the country, "sow finders," and which are so well trained, that like a thorough-bred fox-hound with the fox, no other animal than the Boar will arrest their attention. Immediately as there is a *find* these give tongue, nor cease their cry during the chase. With active but cautious irritation they pursue the Boar, till he is at bay, when, with continual teasings, they artfully know how to turn him sideways to his master, being tutored so to do, as the shoulder affords the best aim for disabling him most readily; and in this position he endeavours to keep him till his master fires. If the Boar, after being brought to bay, be but ineffectually wounded, he becomes most furious and formidable, and his four large tusks are stops more dangerous than the "bristling spears of battle." Not only does he toss the heaviest hounds with them, but frequently mortally wounds the most athletic huntsman. Some huntsmen, when attacked, instead of trusting to their dogs, frequently rely upon their own courage and skill, preferring gallantly to receive him upon the point of a short sword or hanger, which, and our kind informant can speak from experience, however, requires all his strength and address: for, as the Boar rushes powerfully forward, he will immediately find himself prostrated before him, should he miss his aim; he can then only save himself by laying close to the ground, and face downwards; for, as the Boar always strikes upwards, he, by hitting his nose against the ground, will greatly impede himself. From this awkward situation the sportsman is usually relieved by his companions, either shooting at the Boar while so upon him, and their expertness makes this of little danger, or by their loosing large dogs, when, during a furious combat, the awkward sportsman receives many a severe contusion, accompanied sometimes by the derision of his companions.

If it happen that the wounded Boar makes off, the Boar-hound, a species of blood-hound, says Colonel De Berenger, "is let loose, which pursues him for miles, giving tongue, nor will he leave him, even if other Boars come in his way. When this dog overtakes the Boar he furiously attacks him, and a fierce combat ensues, in which the hounds are often destroyed; the huntsman, who has actively followed the sound, in this case generally slays the Boar by thrusting his sword, or a small knife, into the spine of the neck, and this sagacious dog is taught to give great aid to this difficult task, by seizing one of the Boar's ears, when, by jumping over his back, with it fast between his teeth, by the consequent confined attitude, he prevents the Boar from injuring his master."

[*Annals of Sporting.*

EXTRACT FROM THE DIARY OF AN ORNITHOLOGIST DURING A SOUTHERN TOUR.

"Crossed the Potomac at Georgetown on the 20th of January; weather severely cold, and the river completely ice bound; reached Fredericksburgh the 22d. During my stay there, made a short excursion from town, but saw no object worthy of particular remark. 27th, arrived at Richmond. February 9th, one mile north of Rich-

mond, saw the Pine-Creeping Warbler, (*Sylvia pinus;*) considered this an extraordinary occurrence, as the weather had been severely cold; made several unsuccessful excursions while at Richmond. At Petersburgh 19th, saw numbers of the Yellow-Rump Warbler, (*Sylvia coronata,*) hopping about the denuded branches of the aspen trees; the weather was quite cold, and the snow falling at the time; believe this bird to be the last of the Silvia tribe, except the Blue-bird, (*Sylvia sialis,*) to migrate south in the fall, and the earliest to move north in the spring; supposed they had commenced their partial migrations on the above period, as I saw them repeatedly afterwards as I travelled south. 21st, left Petersburgh, and travelled thirty miles, saw numbers of the Cardinal Grosbeak, or Red-bird,(*Loxia cardinalis,*) Snow-birds, (*Fringilla Hudsonia,*) and Blue-birds; saw also, the Barred Owl, (*Strix nebulosa.*) 22d, was greeted at sunrise by the sweet, warbling notes of the Blue-bird; commenced my journey at half-past seven; the weather previous to this for many days had been alternately cold and wet, but this day it was delightfully pleasant, and the animating influence of the sun, seemed to give life to every object; saw a great variety of birds, the Snow-bird, White-throated Sparrow, (*Fringilla albicollis,*) Fox-coloured Sparrow, (*F. ferruginea,*) numbers of the Cardinal Grosbeak, Crested Titmouse, (*Parus bicolor,*) Black-capped Titmouse, (*P. attricapillus,*) Turtle Doves, (*Columba Carolinensis,*) Crows, (*Corvus corone,*) Starlings, (*Sturnus prædatorius,*) Cow Buntings, (*Emberiza pecoris,*) Pileated Woodpecker, (*Picus pileatus,*) Golden-winged do., (*P. auratus,*) Red Bellied do., (*P. Carolinensis,*) Hairy do., (*P. villosus,*) Downy do., (*P. pubescens,*) and Yellow Bellied do., (*P. varius,*)—endeavoured to procure the former, but was unsuccessful; saw also the Sparrow Hawk, (*Falco Sparverius,*) Pigeon Hawk, (*F. Columbarius,*) and shot the Red-shouldered Hawk, (*F. lineatus,*) saw numbers of the Turkey Buzzard, (*Vultur aura.*) In consequence of heavy rains many streams were almost impassable; crossed several in water of sufficient depth to swim horses; saw also the Robin, (*Turdus migratorius,*) winter Wren, (*Sylvia troglodytes,*) and heard the Carolina Wren, (*Certhia Caroliniana.*) 23d, in the town of Halifax, N. C., was awakened before sunrise by the spring notes of a Robin, which was perched on the branch of a tree close to my chamber window; arose and took a walk through the town, and saw numbers of the Blue Jay, (*Corvus cristatus,*) in various parts of the town; counted ten on one small tree in the main street, so tame and unsuspicious, that they suffered me to approach within thirty feet of them, a very unusual circumstance; also in the course of the day, the Kildeer, (*Charadrius vociferus,*) Purple Grackle, (*Gracula quiscala,*) and for the first time this season, the Brown Thrush, (*Turdus rufus;*) had an invitation to join a party to hunt Wild Turkeys, but declined. 24th, saw nothing worthy of remark; 25th, reached Raleigh, N. C. late in the evening.

I spent a few days very agreeably in this place, and made several hunting excursions; became acquainted with some of the leading sportsmen of the city; was exceedingly gratified at the courteous attention and kindness of General Beverly Daniel, U. S. Marshall for the state. General Daniel is one of the most indefatigable sportsmen of the country, and has of late years confined himself while hunting to the pleasures of the chase, more especially that of hunting deer on horseback and with hounds; his pack is of the first order, and he never relinquishes the object of his pursuit while there is the slightest prospect of success; a visit to this gentleman will convince any one, that he possesses every thing that is requisite for a sportsman of the first order, and his very amiable and gentlemanly bearing places you free from restraint, and makes you feel that his home is your home. There are several other sportsmen in this place who shoot well, and are very polite and attentive to strangers, and one or two excellent pointer dogs. A northern sportsman who desires to gratify himself with hunting, can find abundance of it here, and would do well to visit this place. Partridges are most plentiful, wild turkeys, deer and foxes, also, *and now and then a wild cat* affords amusement, whenever any individual chooses to mount his horse and go in pursuit; and General D., with his fine pack of hounds, is always ready to contribute to the enjoyment of a stranger, when his character is such as to command that distinguished attention. The country around Raleigh is an admirable sporting district, and although thickly settled, it is not necessary to make excursions over a mile for partridges, and a very few miles for any other description of game common to that part. By-the-by, I have a very good anecdote to tell of the perseverance of General D., which proves the necessity also, of following up the chase, even when hope of success has failed, and that many a fine deer has been lost to the hunter, when but little more effort would have gained him his prize. General D., with some friends, had made a hunt after deer, and the pack of hounds soon opened on a fresh trail, which was followed by hounds and huntsmen at a rapid rate for a long time, but the activity of the deer led its pursuers across many a stream and swamp far from home, until day was drawing to its close, and the party worn out. The dogs had become silent, or had run out of hearing, and in consequence of this, the party,

except General D., had become discouraged, and proposed to return home; he therefore desired that they would make one more attempt, and if they failed in this, he would return home with them; (he suspected his hounds had taken the deer to a certain point on a distant stream, and there had killed it;) but his importunity availed nothing, and they separated, he for further pursuit, and they for their homes. The noise of the hounds had ceased for some time, and, after riding a few miles, he could gain no other intelligence than that they were seen moving in the very direction he expected; he became now almost convinced that they had overtaken the deer, and were eating it; but he moved rapidly on to the spot, which he soon reached, and much to his satisfaction, saw a buck lying in the water on its side dead, and the hounds completely exhausted on the margin of the stream, unable to proceed any further;—this may be called the summit of the huntsman's glory.

"March 6th, saw and shot a Loggerhead Shrike, (*Lanius Carolinensis*,) the first living bird of that kind I had ever seen; these birds seldom settle on a tree at any height from the ground; perhaps the average height may be fifteen feet, and mostly on the central topmost branch; it is from this elevation, that in its silent watchfulness it discovers the mice and various worms on the ground, which form its food: this bird would be of great interest to the northern husbandman, because it devours so many mice and large worms; but its range north is North Carolina; from thence south it may be seen in every neighbourhood, and is very useful on the cotton plantations. 7th, procured two or three specimens of squirrels; also saw some wild turkeys cross the road, but at too great a distance to shoot; this evening reached Columbia, S. C. The country around this city is a tolerably good ornithological district; but the only gentleman in the place who takes an interest in natural history is Dr. Gibbes, professor of chemistry in Columbia College; this gentleman pursues the study of natural history with great spirit, and has already a very superior collection on this subject; his cabinet of minerals is truly splendid, and has cost a large sum of money. The Blue Grosbeak, (*Loxia cærulea*,) and the Cœrulean Warbler, (*Sylvia cærulea*,) rare and most beautiful birds, frequently make their appearance in this neighbourhood. Dr. Gibbes has also procured several specimens of the Bewicks Wren, (*Troglodytes Bewickii*,) near his premises, a new bird, figured by Mr. Audubon in the first volume of his work, a copy of which I saw in the College Library, which, it appears, was subscribed for by the state, and deposited there; another copy is in the Charleston City Library; and a third, I understood, was purchased by a few spirited individuals of the city of Charleston. 12th, left Columbia about twilight, heard the well-known spring note of the Woodcock, (*Scolopax minor*;) to my surprise I found the Woodcock was considered a rare bird south of Richmond, and the few which visit the southern states remain but a very short period during their migrations in the spring and fall. 13th, on the road to Augusta, was much diverted at seeing some men shooting with rifles at a black squirrel on the topmost branches of a tall pine; they had fired five or six unsuccessful shots with a rest, and it was finally left to my shot-gun to kill the animal; this pleased them much, as they belonged to some poor families then on the road, migrating to Alabama, and had been on short allowance of meat for some days. I discovered the Brown-headed and Red-bellied Nuthatches, (*Sitta pusilla and S. varia*,) to be very common in South Carolina and Georgia; but did not, during my visit in those states, see a single White-breasted Nuthatch, (*S. Carolinensis*;) and Dr. Gibbes, of Columbia, informed me that he had never seen one in that neighbourhood; this is remarkable, as its name would determine its residence there; the Pine-creeping and Yellow-rump Warblers remain in this country the whole year. 14th, saw in some ponds of shallow water, close to the road side, the Mallard, (*Anas bochas*,) the Buffel-headed, (*A. albeola*,) and Summer Ducks, (*A. sponsa*,) feeding on some short grass beneath the surface of the water; saw an abundance of the Cardinal Grosbeak the whole of my journey. Their plumage is much more brilliant than those of the north.

"20th, left Augusta for Savannah, saw the Ruby-crowned Wren, (*Sylvia calendula*,) also for the first time, a pair of Ground Doves, (*Columba passerina*,) or, as they are called, the Mourning Doves—noticed to-day also for the first, the Black Vulture, (*Vultur jota*;) this bird is smaller than the other species, and its location is in the south; it is very seldom seen as far north as Virginia. There is a story told, that during the Revolutionary War, the Black Vultures fed on some of the human and brute carcasses left on a field of battle in S. C., and that numbers had followed the army afterwards to the middle states, where they remained during the sojourn of the troops there, but were never seen before nor since, north of the Potomac.—Approached a pond, and saw a large flock of the Buffel-headed Ducks feeding, also two Blue Herons, or Cranes, (*Ardea cærulea*,) endeavoured to shoot the latter, but they would not suffer me to approach them.—About sunset heard the Wild Turkeys going to their roosts; the noise created by their wings, while flying to the top of the tall pine trees, is so great, that in still weather, it may be heard distinctly for half a mile; it requires great exertion on the part of the bird to reach their roosting places, as

they settle on limbs seldom less than forty feet from the ground, and the body of the bird being very heavy, the resistance to the air caused by the concave wings, creates a loud rustling noise, entirely unlike any other sound, that at the above distance, the traveller, or hunter, cannot be mistaken. This is the most propitious period to hunt them, and is generally observed as such by the hunters of the south, who, when the first bird flies into a tree, direct their footsteps as rapidly as is consistent with caution, and frequently succeed in killing several, before the remainder take alarm and escape. 21st, killed a large rattlesnake, which was just emerging from some bush-land on fire; it was four and a half feet long, and rather over two inches in diameter, and had but one rattle. I saw others which were not half of those dimensions with three rattles. Quere. Can the number of rattles determine the age, as is generally supposed?

"22d, heard the singular notes, *kek, kek, kek*, of the Ivory-billed Woodpecker; (*Picus principalis,*) endeavoured with much caution to shoot it, but it eluded my efforts after following through a swamp from tree to tree for a long distance; these birds are becoming very scarce in South Carolina and the northern part of Georgia: during Wilson's excursions he found them in North Carolina, but I did not see one in that state, and in my frequent inquiries among the residents, found the bird was unknown. 23d, the morning was beautiful; arose early and took my seat in the porch of the tavern; around this house was a great many live oak trees, which formed a handsome grove of evergreens. Among the branches of these and on the ground were quantities of the Cardinal Grosbeak; counted fourteen hopping about the ground within a few yards of the house; noticed the circumstance to the landlady, who stated that she had fed and encouraged them for a long time on pounded groundnuts, and they had become so tame at times, that when her negroes fed them, they would crowd around like chickens; the gray, cat, and fox squirrels, are abundant here among the pines, but the ground squirrel is very rare; and the chickaree, which, in the north, is so fond of pine woods, is never seen on the seaboard of South Carolina and Georgia. Much to my gratification I saw a flock of Whooping Cranes, (*Ardea Americana,*) eleven in number, but at a very great height from the earth; they were directing their course north. Sometime before they passed over, I heard a most singular noise, but could not discern the source whence it proceeded, but, as the sound grew more distinct, I had the curosity to alight, when I saw them approaching most majestically. The remarkably guttural sounds produced by a company of these birds, strikes the ear in strange discord, and may be heard at an astonishing distance; they fly parallel with each other; but when in a body, not perfectly horizontal like the duck, or swan, or even others of the same tribe, as I could observe their movement to be undulatory, although in very long curvatures: this bird is very difficult to procure, as it cannot be approached within gun-shot, and being the largest of the tribe, and, when feeding, always chooses those places, where, by its great height, it can see objects around it for a great distance, which of course precludes the possibility of approach. Saw the Blue-gray Fly Catcher, (*Muscicapa cærulea,*) and Prairie Warbler, (*Sylvia minuta;*) the latter appeared without song; this evening reached Savannah."

(*To be continued.*)

For the Cabinet of Natural History.

STANZAS TO THE MOCKING-BIRD.

By Charles West Thomson.

Beautiful charmer! bird of many voices!
Most sweet magician of the choral throng!
How nature in her woodland haunts rejoices,
When thou hast filled the summer wilds with song!

Well may the grove be envious of thy powers,
When thou canst rival every warbler's tone,
Pouring the richest melody in showers,
That prove the gifts of all the rest thine own.

Not unto thee has bounteous nature given
The bright cerulean plumage of the jay,
Nor the swan's vesture, like the snow from heaven,
Nor the woodpecker's fanciful array.

The parrot's coat is far more rich and glowing;
The red-bird much outshines thee on the wing;
And when the peacock his gay train is showing,
Thou seem'st a mean and unregarded thing.

But what is all the dazzled eye discovers
In the gay dresses that to these belong,
To the more glorious charm that round thee hover,
When thou hast lifted up thy voice in song!

Enchanter of the woods! the richest treasures
Of native melody in thee we find;
Each other songster trills his simple measures,
But all the forest is in thee combined.

Thy imitative art is ever waking
To catch the varied notes that round thee ring,
And each new manner with strange aptness taking,
Thou teachest others how, improved, to sing.

The softest tones the gentle cat-bird utters,
Or the loud clamour of the noisy crow,
The lark's sweet glee, or what the harsh owl mutters,
With equal truth thy magic voice can show.

Then come—a host thyself—with no adorning
But the plain garb that nature bids thee wear;
The gaudy show of weaker songsters scorning,
Come, and with melody invest the air.

O, ever welcome! how the grove rejoices
Listening thy harmony, so sweet and strong!
Beautiful charmer! bird of many voices!
Come and delight our weary souls with song!

THE EUROPEAN QUAIL.

THERE is much diversity of opinion in regard to the American Partridge, or Quail. From New-Jersey north this bird is wholly called, and known as the Quail. In Pennsylvania, and all of the states south and west, it is called the Partridge.

The subjoined history of the true or European Quail, will suffice to show, in a comparison with the history of our partridge, that it is a different bird in habit and character altogether.

The Quail, in appearance, is so much like the partridge, as to be in some places called the *dwarf partridge;* and in the manners of the two species there is a great resemblance. They form their nests and rear their young nearly in the same way. They are, however, in many respects, very different. Quails migrate to other countries; they are always smaller; and have not a bare space between the eyes, nor the horse shoe, or crescent, figure on the breast. The eggs too, are less than those of the partridge, and very different in colour. Their voices are unlike. Quails seldom live in covies, except when their wants unite the feeble family to their mother, or some powerful cause urges at once the whole to assemble, and traverse together the extent of the ocean, holding their course to the same distant lands. They are much less cunning than the partridge, and more easily ensnared, especially when young. Their disposition is not so gentle as that of the partridge.

Quails are found in most parts of Great Britain, but not very numerously, and they are seldom seen in the midland counties. It appears that one circumstance which determines their abode in that country is plenty of herbage; since, in a dry spring, when grass is consequently scarce, few Quails are to be met with.

The females lay ten or twelve eggs, in the incubation of which they are occupied three weeks. The eggs are whitish, but marked with ragged rust-coloured spots. Quails have been supposed, but without foundation, to breed twice in the year.

It is said that Quails usually sleep during the day concealed in the tallest grass; lying on their sides, with their legs extended, in the same spot, even for hours together. So very indolent are they, that a dog must absolutely run upon them before they are sprung; and, when they are forced upon the wing, they seldom fly far. Quails are easily drawn within reach of a net, by a call, imitating their cry, which is done by an instrument called a quail pipe, which is rarely, if ever used in England, having been superseded by the fowling-piece.

Quails visit England in the spring, and generally leave it again in the latter end of September; they are sometimes found later, and, if the accounts are to be depended on, instances are not wanting, where they have remained the whole year. They are supposed to winter in Africa. If to the circumstance of their generally sleeping in the day, is added that of their being seldom known to make their first annual appearance in the day time, it may be inferred that they perform their journey by night, and that they direct their course to those countries where the harvest is preparing, and thus change their abode to procure a subsistence. On their arrival at Alexandria, in Egypt, such multitudes are exposed in the markets for sale, that three or four may be bought for a medina, (less than three farthings.) Crews of merchant vessels have been fed upon them; and complaints have been laid at the consul's office by mariners against their captains for giving them nothing but Quails to eat.

With wind and weather in their favour, they have been known to perform a flight of fifty leagues across the Black Sea in the course of a night; a wonderful distance for so short-winged a bird.

Such prodigious quantities of Quails have appeared on the western coasts of the kingdom of Naples, in the vicinity of Nettuno, that a hundred thousand have, in one day, been caught within the space of three or four miles. Most of these are taken to Rome, where they are in great request, and are sold at high prices. Clouds of Quails also alight in spring along the coasts of Provence; especially on the lands which border on the sea, and are sometimes found so exhausted, that for a few of the first days

they may be caught with the hand. In some parts of the south of Russia they abound so greatly, that at the time of their migration, they are caught by thousands, and sent in casks to Moscow and Petersburgh.

It seems that great quantities of these birds are imported into England from France. They are conveyed by stage-coaches; about one hundred in a large square box, divided into five or six compartments, one above another, just high enough to admit the Quails to stand upright. Were they allowed a greater height than this, they would soon kill themselves; and even with this precaution the feathers on the top of the head are generally beaten off. These boxes have wire on the fore part, and each partition is furnished with a small trough for food. They may be forwarded in this manner, without difficulty, to great distances.

With respect to these birds having an instinctive knowledge of the precise time for emigration, there is a very singular fact in some young Quails, which had been bred in a state of confinement from the earliest period of their lives, had never enjoyed, and therefore could not feel the loss of liberty. For four successive years, they were observed to be restless, and to flutter, with unusual agitations, regularly in September and April; and this uneasiness lasted thirty days at each time. It began constantly about an hour before sunset. The birds passed the whole night in these fruitless struggles; and always on the following day appeared dejected and stupid.

Quails are birds of undaunted courage, and their quarrels often terminate in mutual destruction. This irascible disposition induced the ancient Greeks and Romans to fight them with each other, as the moderns do game cocks. And such favourites were the conquerors, that, in one instance, Augustus punished a prefect of Egypt with death for bringing to his table one of these birds which had acquired celebrity for its victories:—so at least it is recorded; but, when the character of Augustus is taken into consideration, the account appears scarcely entitled to credit.

Sometimes combats, we are told, were performed between a Quail and a man; the Quail was put into a large box, and set in the middle of a circle traced on the floor; the man struck it on the head with one finger, or plucked some feathers from it: if the Quail, in defending itself, did not pass the limits of the circle, its master won the wager; but if, in its fury, it transgressed the bounds, its antagonist was declared victor.

The Chinese use this bird, it is said, whose body is very hot, to warm their hands in cold weather; and among the French, "*Chaud comme un caille*—warm as a Quail," is a proverb.

Quails, where they can be found, afford good practice to the young shooter: they fly straight, and seldom far; and thus many shots may be obtained with little difficulty.

The length of the Quail is seven inches and a half, breadth fourteen; bill dusky; the feathers of the head, neck, and back, are a mixture of a brown ash-colour and black; the crown of the head divided by a whitish yellow line, beginning at the bill, and running along the hind part of the neck to the back; above each eye is another similar coloured streak; a dark line passes from each corner of the bill, forming a kind of gorget above the breast; the chin, throat, belly, thighs, and vent, dirty yellowish white; the scapular feathers, and those of the back, are marked in their middles with a long light yellow streak, and on their sides with ferruginous and black bars; the coverts of their wings are reddish brown, elegantly barred with paler lines, bounded on each side with black; the quills are lightish brown, with small rust-coloured bands on the exterior edges of the feathers; the breast is of a pale rust-colour, spotted with black, and streaked with pale yellow; the tail consists of twelve short feathers, barred with black and very pale brownish red; the legs are pale brown.

The female differs from the male in having no black spots on the fore part of the neck, breast and side feathers, and from the colours being less vivid. Some of them have a long spot of brown beneath the throat.

DIRECTIONS FOR FISHING FOR PIKE.

The Pike loves a still, shady, unfrequented water, and usually lies amongst or near weeds; such as flags, bulrushes, candocks, reeds, &c. in the green fog that sometimes covers standing waters, though he will sometimes shoot out into the clear stream. He is sometimes caught at the top and in the middle; and often, especially in cold weather, at the bottom.

Their time of spawning is about the end of February or the beginning of March; and chief season, from the end of May to the beginning of February.

Pikes are called jacks till they become twenty-four inches long.

The baits for Pike are a small trout, frogs, the loach and miller's-thumb; the head end of an eel, with the skin taken off below the fins; a small jack; a lob-worm; and in winter, the fat of bacon. And notwithstanding what Walton and others say against baiting with a perch, it is confidently asserted that Pikes have been taken with a

small perch, when neither a roach nor bleak would tempt them.*

Observe that all your baits for Pike must be as fresh as possible. Living baits you may take with you in a tin kettle, changing the water often: and dead ones should be carried in fresh bran, which will dry up that moisture that otherwise would infect and rot them.

In trolling, the head of the bait-fish must be at the bent of the hook; whereas in fishing at the snap, the hook must come out at or near his tail. But the essential difference between these two methods is, that in the former the Pike is always suffered to pouch or swallow the bait: but in the latter you are to strike as soon as he has taken it.

The rod for trolling should be about three yards and a half long, with a ring at the top for the line to run through; or you may fit a trolling-top to your fly rod, which need only be stronger than the common fly-top.

Let your line be of green or sky-coloured silk, thirty yards in length, which will make it necessary to use the winch, as is before directed, with a swivel at the end.

The common trolling-hook for a living bait consists of two large hooks, with one common shank, made of one piece of wire, of about three-quarters of an inch long, placed back to back, so that the points may not stand in a right line, but incline so much inwards as that they with the shank may form an angle little less than equilateral. At the top of the shank is a loop, left in the bending the wire to make the hook double, through which is put a strong twisted brass wire, of about six inches long; and to this is looped another such link, but both so loose that the hook and lower link may have room to play. To the end of the line fasten a steel swivel.

But there is a sort of trolling-hook, different from that already described and to which it is thought preferable, which will require another management: this is no more than two single hooks tied back to back, with a strong piece of gimp between the shanks. In the whipping the hooks and the gimp together, make a small loop; and take into it two links of chain, of about an eighth of an inch diameter, and into the lower link, by means of a small staple of wire, fasten by the greater end a bit of lead of a conical figure, and somewhat sharp at the point. These hooks are to be had at the fishing tackle shops ready fitted up.

* A frog skinned, will, by the whiteness of its flesh, tempt Pike, when other measures fail, but it must be kept in motion, and when seized, will be carried slowly to the bottom by the fish: you must suffer it to remain several minutes before you strike, for, should the Pike not be very greedy, he will keep it in his jaws some time before he swallows it.—Ed.

The latter kind of hook is to be thus ordered, viz: put the lead into the mouth of the bait-fish, and sow it up; the fish will live some time; and though the weight of the lead will keep his head down, he will swim with near the same ease as if at liberty.

But if you troll with a dead bait, as some do, for a reason which the angler will be glad to know, viz: that a living bait makes too great a slaughter among the fish, do it with a hook, of which the following paragraph contains a description:

Let the shank be about six inches long, and leaded from the middle as low as the bent of the hook, to which a piece of very strong gimp must be fastened by a staple, and two links of chain; the shank must be barbed like a dart, and the lead a quarter of an inch square: the barb of the shank must stand like the fluke of an anchor, which is placed in a contrary direction to that of the stock. Let the gimp be about a foot long; and to the end thereof fix a swivel. To bait it thrust the barb of the shank into the mouth of the bait-fish, and bring it out at his side near the tail: when the barb is thus brought through, it cannot return, and the fish will lie perfectly straight, a circumstance that renders the trouble of tying the tail unnecessary.

There is yet another sort of trolling-hook, which is, indeed, no other than what most writers on this subject have mentioned; whereas the others, here described, are late improvements: and this is a hook, either single or double, with a long shank, leaded about three inches up the wire with a piece of lead about a quarter of an inch square at the greater or lower end: fix to the shank an armed wire about eight inches long. To bait this hook, thrust your wire into the mouth of the fish, quite through his belly, and out at his tail; placing the wire so that the point of the hook may be even with the belly of the bait-fish; and then tie the tail of the fish with strong thread to the wire: some fasten it with a needle and thread, which is a neat way.

Both with the troll and at the snap, cut away one of the fins of the bait-fish close at the gills, and another behind the vent on the contrary side, which will make it play the better.

The bait being thus fixed, is to be thrown in, and kept in constant motion in the water, sometimes suffered to sink, then gradually raised: now drawn with the stream, and then against it; so as to counterfeit the motion of a small fish in swimming. If a Pike is near, he mistakes the bait for a living fish, seizes it with prodigious greediness, goes off with it to his hole, and in about ten minutes pouches it. When he has thus swallowed the bait, you will see the line move, which is the signal for striking him; do this with two lusty jerks, and then play him.

The other way of taking Pike, viz: with the snap, is as follows:

Let the rod be twelve feet long, very strong and taper, with a strong loop at the top to fasten your line to. Your line must be about a foot shorter than the rod, and much stronger than the trolling-line.

And here it is necessary to be remembered, that there are two ways of snapping for Pike, viz: with the live and with the dead snap.

For the live snap, there is no kind of hook so proper as the double spring hook. To bait it, nothing more is necessary than to hang the bait-fish fast by the back fin to the middle hook, where he will live a long time.

Of hooks for the dead snap, there are many kinds: but the one, which, after repeated trials, has been found to excel all others hitherto known, we subjoin the description and use of as follows, viz: whip two hooks, of about three-eighths of an inch in the bent, to a piece of gimp, in the manner directed for that trolling-hook. Then take a piece of lead, of the same size and figure as directed for the trolling-hook above mentioned; and drill a hole through it from end to end. To bait it, take a long needle or wire; enter it in at the side, about half an inch above the tail, and with it pass the gimp between the skin and the ribs of the fish, bringing it out at his mouth: then put the lead over the gimp, draw it down into the fish's throat, and press his mouth close, and then, having a swivel to your line, hang on the gimp.

In throwing the bait, observe the rules given for trolling; but remember, that the more you keep it in motion the nearer it resembles a living fish.

When you have a bite, strike immediately, the contrary way to that which the head of the Pike lies, or to which he goes with the bait; if you cannot find which way his head lies, strike upright with two smart jerks, retiring backwards as fast as you can, till you have brought him to a landing place, and then do as before is directed.

As the Pike spawns in March, and before that month rivers are seldom in order for fishing, it will hardly be worth while to begin trolling till April: after that the weeds will be apt to be troublesome. But the prime month in the year for trolling is October; when the Pike are fattened by their summer's feed, the weeds are rotted, and by the falling of the waters the harbours of the fish are easily found.

Choose to troll in clear, and not muddy water, and in windy weather, if the wind be not easterly.

Some use in trolling and snapping two or more swivels to their line, by means whereof the twisting of the line is prevented, the bait plays more freely, and, though dead, is made to appear as if alive, which, in rivers, is doubtless an excellent way: but those who can like to fish in ponds, or still waters, will find very little occasion for more than one.

The Pike is also to be caught with a minnow; for which method take the following directions:

Get a single hook, slender, and long in the shank; let it resemble the shape of a shepherd's crook; put lead upon it, as thick near the bent as will go into a minnow's mouth; place the point of the hook directly up the face of the fish. Let the rod be as long as you can handsomely manage, with a line of the same length. Cast up and down, and manage it as when you troll with any other bait. If, when the Pike hath taken your bait, he run to the end of the line before he hath gorged it, do not strike, but hold still only, and he will return back and swallow it. But if you use that bait with a troll, I rather prefer it before any bait that I know.

In landing a Pike, great caution is necessary; for his bite is esteemed venomous. The best and safest hold you can take of him is by the head; in doing which, place your thumb and finger in his eyes.—*Complete Angler.*

A SPORTING DIALOGUE.

Enter Monsieur BREMOND.

D——. Good morning, Mr. B.——; how do you feel after your excursion yesterday? I understood you went after partridges.

B——. Oh, passablement, only leetel suffare vid de rheumatis.

D——. That is bad, but I heard you beat the whole company shooting; how came that? three of our best shots too!

B——. Oh, vy, yes, you see, de first bird ven he get up, Major C—— fire—*pong*, (imitating the report of the gun.) No ting.—Mons. D— —he fire—*pong*—No ting.—Mons. F—— he fire too—*pong*—No ting.—I take a de pinch' of my rappee, (bringing his hands up in the line of aim,) *p-o-n-g*—dat put her down.

D——. Excellent indeed; but how did you like your young dog, you tried him a few days ago, did you not?

B——. (With great emotion,) oh, mine cot, if you had see de perform of Dash. I will confess, ma foi, I nevare have see dog like a dat—he range de field so grand, and for settin bird, dere is no dog like him.

D——. But what did you find? I suppose you killed a great many birds.

B——. (shrugging up his shoulders,) Ah, to be sure, you may say I did not see no ting. But I will confess, mine cot, I have in my life nevare see dog like a dat.

NOTES OF A NATURALIST.

By Jacob Green, M. D., &c.

I have passed a portion of the summer and autumn of the last few years in the western part of Pennsylvania, in a little village almost surrounded with lofty hills. Along the base of one of the hills, a fine stream of water winds its way to the mighty Ohio, which river it joins a few miles from the city of Pittsburg. The great post-road from Philadelphia to Wheeling passes through this village; but it is quite remote from any thickly inhabited town. Much of the surrounding country is as rude and uncultivated as when the red man of the forest was lord of the soil. In such a spot as this, where hills, and dales, and woods, and streams, are almost all fresh from the hand of the Bestower, the lover of nature will be sure to find much that is new to amuse and interest him. My present object is to record a few scattered observations made during some leisure hours when exploring this extensive and almost untrodden field of teeming nature.

The Bat.

"——————— Lucemque perosi,
Nocte volant, seroque trahant a vespere nomen."
Ovid. Metam.

There is scarcely any quadruped to which most persons have a greater aversion than the Bat. The ancient poets derived their terrible fictions of the Harpies from some winged monster of this genus. Many of our antipathies cannot easily be explained; but our aversion from the Bat may be traced to several causes. With some, it may in part arise from the fact that it is one of the unclean animals enumerated in the Pentateuch; or, perhaps, from the circumstance that it inhabits gloomy caverns and deserted ruins. The principal reason is, no doubt, the general belief that it is a noxious creature. In some cases where the Bat has flown into a room during the evening, I have heard of its getting entangled in the hair of the head, and thus occasioning serious bites. Though it is considered by most naturalists as a fabulous story, it is next to certain, that some of the species suck the blood of man and other animals during sleep. I am informed by my friend Titian R. Peale, Esq., that several undoubted instances of this kind fell under his own observation during a late visit to South America. One was that of an individual who slept on a hammock within a few feet of his own. He examined the bleeding wounds of the person bitten, and now entertains no doubt on the subject, though he often slept with his feet uncovered, without being so fortunate as to receive an attack. The indefatigable naturalist, Mr. Waterton, who was for several months in Dutch and Portuguese Guiana, where the vampyre abounds, is fully convinced that they have this power, though he also in vain threw himself into the most favourable situations for the animal to exercise its sanguineous propensities upon himself. "The provoking brute," he remarks, "would refuse to give my claret a solitary trial, though he would tap the more favoured Indian's toe, in a hammock within a few yards of mine. For the space of eleven months I slept alone in the loft of a woodcutter's abandoned house in the forest, and though the vampyre came in and out every night, and I had the finest opportunity of seeing him, as the moon shone through apertures where windows had once been, I never could be certain that I saw him make a positive attempt to quench his thirst from my veins, though he often hovered over the hammock." See Loudon's Mag., Sept., 1832. The great mystery in this whole process is how the Bat punctures the blood-vessels so as not to wake the sufferers. As far as my observation extends, none of the Bats which inhabit our northern states, have the propensity to suck the blood of living animals. I have long been in the habit of observing this wonderful quadruped, and some of my remarks on this subject will be found published by the late Dr. John D. Godman, in his American Natural History. The Rev. G. White, in his Selborne, gives a curious account of a tame Bat "that would take flies out of a person's hand;" but although I have made frequent attempts to domesticate these birds of night, they all entirely failed; none of the animals lived more than two or three weeks after their imprisonment.

From the equivocal character of the Bat, forming as it does so striking a link in the chain of organized beings between quadrupeds and birds, it might be supposed that the family to which it belongs was well understood by naturalists, yet perhaps there is no one which is more confused. Most of the genera are founded on the number and position of the cutting teeth, characters which have been fully ascertained to vary with the age of the animal. Professor Rafinesque has proposed a genus which he calls Nyticeus, which includes those Bats with two incisors in the upper jaw near the canines, widely separated in front by an intervening space. In this genus I placed the Bat which I shall presently describe; but Mr. Gray, in his "Natural Arrangement of the Genera of Bats," (Philosophical Magazine, vol. 6, N. S.,) observes, that this genus depends on the "deciduous nature of the teeth." The Baron Cuvier, though he mentions Nycticeus with some favour, still he does not adopt it; I have myself, however, but little doubt that the distinctions noticed by Professor R. will be found permanent.

In the retired spot where I now reside, I have been much amused with a species of Bat which differs in its general appearance very much from those which commonly inhabit eastward of the Alleghany Mountains. Just as the sun sinks behind the lofty hills which encompass our village, it is my custom to pass the twilight hours near an old dwelling which stands about midway up one of the highest steeps, and is on the road side near the centre of the town. Here flocks of Bats commence their nocturnal flights; immediately on leaving their hiding places, they skim in little groups through the air for a few minutes, and then gradually separate from each other, some mounting very high in the atmosphere, and others descending to the foot of the hill for the purpose of drink. These Bats have taken possession of the old building, in the space between the weather-boards and the inside plastering, and are so numerous, that I have counted at one time about two hundred and fifty as they escaped through a single crevice. Towards sunset they press forwards to this opening in such numbers, that there are often some hard combats between them which shall first push through and get on the wing. As different genera of insects inhabit the air at greater or less altitudes, so those animals which prey upon them will fly most generally in different ranges in search of food. Our Bat seems to prefer a loftier region for this purpose than those which I have noticed in the Atlantic States. By this means they also escape in a great measure from their deadly foe, the owl, who prowls most successfully in the regions below. The following is a description of one of these Bats, which darted into my study the other evening.

Vespertilio Domesticus.—*Green.*

Four incisors in the upper jaw near the canines, with a large unoccupied space between them, each pair being of unequal lengths—the tooth nearest the canines the longest; upper lip furnished with numerous short bristles; nares placed laterally at the base of a wart-like prominence, which gives to the nose a slightly bifid appearance; ears remote, naked, broad, entire, much longer than the head; auriculum, or tragus, entire, lanceolate, obtuse rather more than half the length of the ears; pelage above mouse colour, darkest over the nose; lighter below, with a dark fawn coloured spot near the axilla; wings and interfemoral membrane naked; tail scarcely projecting beyond the membrane; length from the tip of the nose to the end of the tail, three inches and one-fourth; breadth across the wings, when fully expanded, nine inches and a quarter.

Shells.

The stream of water which flows during the summer and autumnal months sluggish along the base of our hills, becomes in the spring a deep and rapid river from the melting snows and heavy rains. Large boats and rafts of timber are thus easily floated from the village to Pittsburg. At the season of the year when I visit this spot, the creek, as it is called, contains but very few fish, but it abounds with many interesting aquatic productions. Several species of the Unio and Cyclas in many places literally pave the bed of the stream. Near its mouth most of the fresh water shells common to upper portions of the Ohio river are found in great perfection and abundance. Higher up the stream we find beautiful specimens of the Unio Rubiginosus in considerable numbers, a species not commonly met with near the junction of the creek with the Ohio river. Every American conchologist is aware that our great western rivers and their tributary streams contain an almost infinite variety of species belonging to the genus Unio. Some of the species appear to inhabit all portions of these waters indiscriminately, while others seem to be confined to distinct and often remote localities. In illustration of these remarks, I would now describe a few large shells which I examined and named a number of years since, but which seems to have escaped the notice of our conchologists. The first specimens of this shell which I observed were from the Falls of St. Anthony; I afterwards received it from the Bayou Teche, but I have never discovered nor ascertained that it exists in the Ohio.

Unio Capax.—*Green.*

Testa ovato-triangulari, ventricosa; valvulis tenuibus-hiantibus; natibus prominentibus; margarita cæruleo-alba et iridescente.

The valves of this shell are much more convex or globose than any of the uniones which I have seen; and as they are quite thin compared with most of the western species, the cavity in which the animal is lodged is exceedingly *capacious*—hence its name. The anterior end is broad, rounded, and slightly angular near the hinge; the posterior margin is very narrow, and also rounded; these valves do not close perfectly on each other, but gape at the opposite margins; this is more remarkable in old than in young individuals. The epidermis is smooth, yellowish, and frequently clouded with brown. The nacre is bluish white, and often very beautifully iridescent. The beaks are recurved over the tegument. The teeth resemble very much those of the U. ovatus of Mr. Say, but they are much thinner. These characters, I think, will be sufficient to distinguish the Unio Capax from every other shell.

On some other occasion I propose to notice more particularly the multitude of land shells which inhabit our

neighbouring woods and mountains. I intend now to describe a beautiful little Helicina, found by James S. Craft, Esq., last year, while rambling over the hills not far from the mouth of our creek. The Helicina is by no means a common shell in the United States, and has never before been discovered so far to the north. It has, indeed, so much the character and general aspect of a West-India species, that I suggested a doubt on this subject to Mr. Craft, who thus replied to my inquiries: "Of this fact rest assured; it is a native of our own hills, whether an emigrant from the West Indies may have been its progenitor or not. I found the individual you have alive, and have since discovered several others." Mr. Say, in his excellent work on American Conchology, has described and figured two species of Helicina; the one from Florida, which he calls *orbiculata*, somewhat resembles our species.

Helicina Rubella.—*Green.*

Shell more than one-fourth of an inch broad, subglobose; spire slightly elevated, conical; whorls five or six, with minute oblique striæ; sutures slightly impressed; epidermis smooth and of a light brick-red colour; aperture irregularly lunate, or semi-elliptical; outer lip white, callous, and partially reflected near the base; operculum, corneous, smooth.

I will conclude this paper by describing another little shell, to which I have applied a very big name. It is quite common in the fresh water streams in the mountainous regions of Pennsylvania, but I think is not to be met with near the Atlantic.

Paludina Alleghanensis.—*Green.*

Shell conical, spire elevated and rather obtuse; whorls four, rounded and nearly smooth; the ultimate whorl the largest; mouth oval, slightly angular near the upper part of the peristome, where it adheres to the body-whorl, umbilicus none; epidermis dark brown colour; length two-tenths of an inch. Fine specimens of this shell are in the Cabinet of Mr. W. Hyde.

ON THE PHENOMENA OF HYBRID ANIMALS.

It may be laid down as a general rule, admitting of very few exceptions among quadrupeds, that the hybrid progeny is steril, and there seem to be no well-authenticated examples of the continuance of the mule race beyond one generation. The principal number of observations and experiments relate to the mixed offspring of the horse and the ass; and in this case it is well established, that the male mule can generate and the female mule produce. Such cases occur in Spain and Italy, and much more frequently in the West Indies and New Holland; but these mules have never bred in cold climates, seldom in warm regions, and still more rarely in temperate countries.

The hybrid offspring of the female ass and the stallion, the ἡμιονος of Aristotle, and the hinnus of Pliny, differ from the mule, or the offspring of the ass and mare. In both cases, says Buffon, these animals retain more of the mother than of the father, not only in the magnitude, but in the figure of the body; whereas, in the form of the head, limbs, and tail, they bear a greater resemblance to the father. The same naturalist infers, from various experiments respecting cross-breeds between the he-goat and ewe, the dog and she-wolf, the goldfinch and canary-bird, that the male transmits his sex to the greatest number, and that the preponderance of males over females exceeds that which prevails where the parents are of the same species.

The celebrated John Hunter has observed, that the true distinction of species must ultimately be gathered from their incapacity of propagating with each other, and producing offspring capable of again continuing itself. He was unwilling, however, to admit, that the horse and the ass were of the same species, because some rare instances had been adduced of the breeding of mules, which he attributed to a degree of monstrosity in the organs of the mule, for these, he suggested, might not have been those of a mixed animal, but those of the mare or female-ass. "This," he argues, "is not a far-fetched idea, for true species produce monsters, and many animals of distinct sex are incapable of breeding at all; and as we find nature, in its greatest perfection, deviating from general principles, why may it not happen likewise in the production of mules, so that sometimes a mule shall breed from the circumstance of its being a monster respecting mules?"

Yet, in the same memoir, this great anatomist inferred, that the wolf, the dog, and the jackal, were all of one species, because he had found, by two experiments, that the dog would breed both with the wolf and the jackal; and that the mule, in each case, would breed again with the dog. In these cases, however, we may observe, that there was always one parent at least of pure breed, and no proof was obtained that a true hybrid race could be perpetuated; a fact of which we believe no examples are yet recorded, either in regard to mixtures of the horse and ass, or any other of the mammalia.

Should the fact be hereafter ascertained, that two mules can propagate their kind, we must still inquire whether

the offspring may not be regarded in the light of a monstrous birth, proceeding from some accidental cause, or rather, to speak more philosophically, from some general law not yet understood, but which may not be permitted permanently to interfere with those laws of generation, whereby species may, in general, be prevented from becoming blended. If, for example, we discovered that the progeny of a mule race, degenerated greatly in the first generation, in force, sagacity, or any attribute necessary for its preservation in a state of nature, we might infer, that, like a monster, it is a mere temporary and fortuitous variety. Nor does it seem probable that the greater number of such monsters could ever occur unless obtained by art; for in Hunter's experiments, stratagem or force was, in most instances, employed.

It seems rarely to happen that the mule offspring is truly intermediate in character between the two parents. Thus Hunter mentions, that, in his experiments, one of the hybrid pups resembled the wolf much more than the rest of the litter; and we are informed by Wiegmann, that in a litter lately obtained in the Royal Menagerie, at Berlin, from a white pointer and a she-wolf, two of the cubs resembled the common wolf-dog, but the third was like a pointer with hanging ears.

There is, undoubtedly, a very close analogy between these phenomena and those presented by the intermixture of distinct races of the same species, both in the inferior animals and in man. Dr. Prichard, in his "Physical History of Mankind," cites examples where the peculiarities of the parents have been transmitted very unequally to the offspring; as where children, entirely white, or perfectly black, have sprung from the union of the European and the negro. Sometimes the colour, or other peculiarities of one parent, after having failed to show themselves in the immediate progeny, reappear in a subsequent generation; as where a white child is born of two black parents, the grandfather having been a white.

The same author judiciously observes, that if different species mixed their breed, and hybrid races were often propagated, the animal world would soon present a scene of confusion; its tribes would be every where blended together, and we should, perhaps, find more hybrid creatures than genuine and uncorrupted races.

[*Lyell's Geology.*

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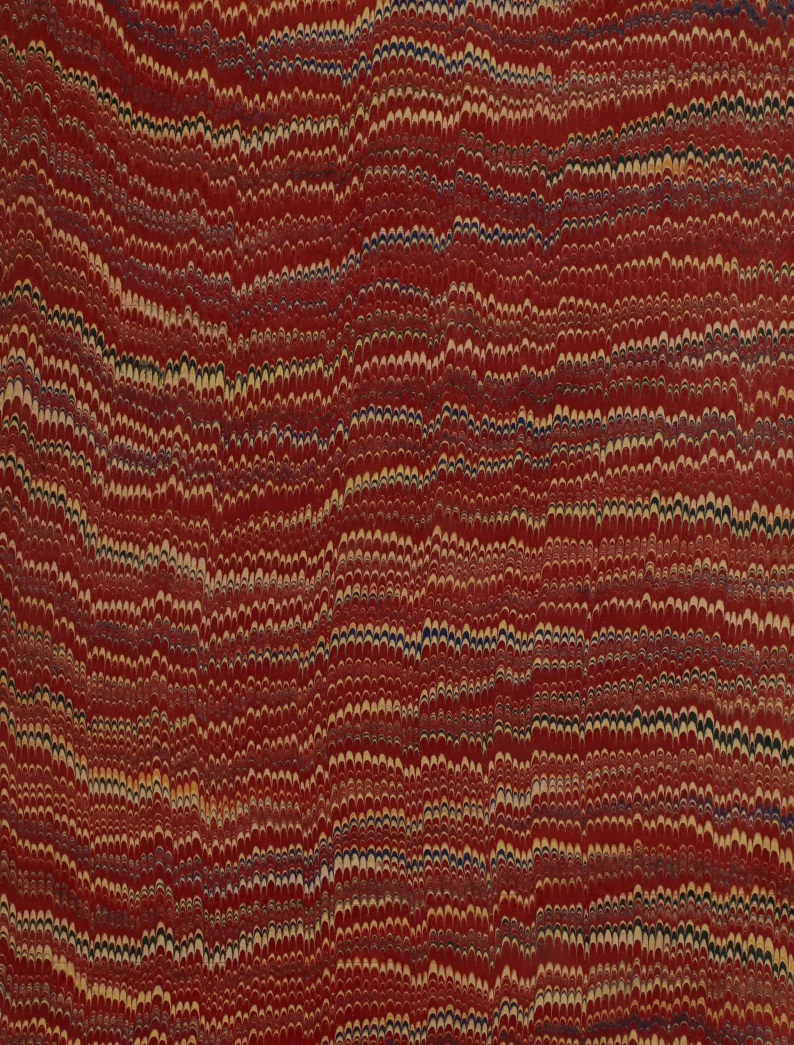
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